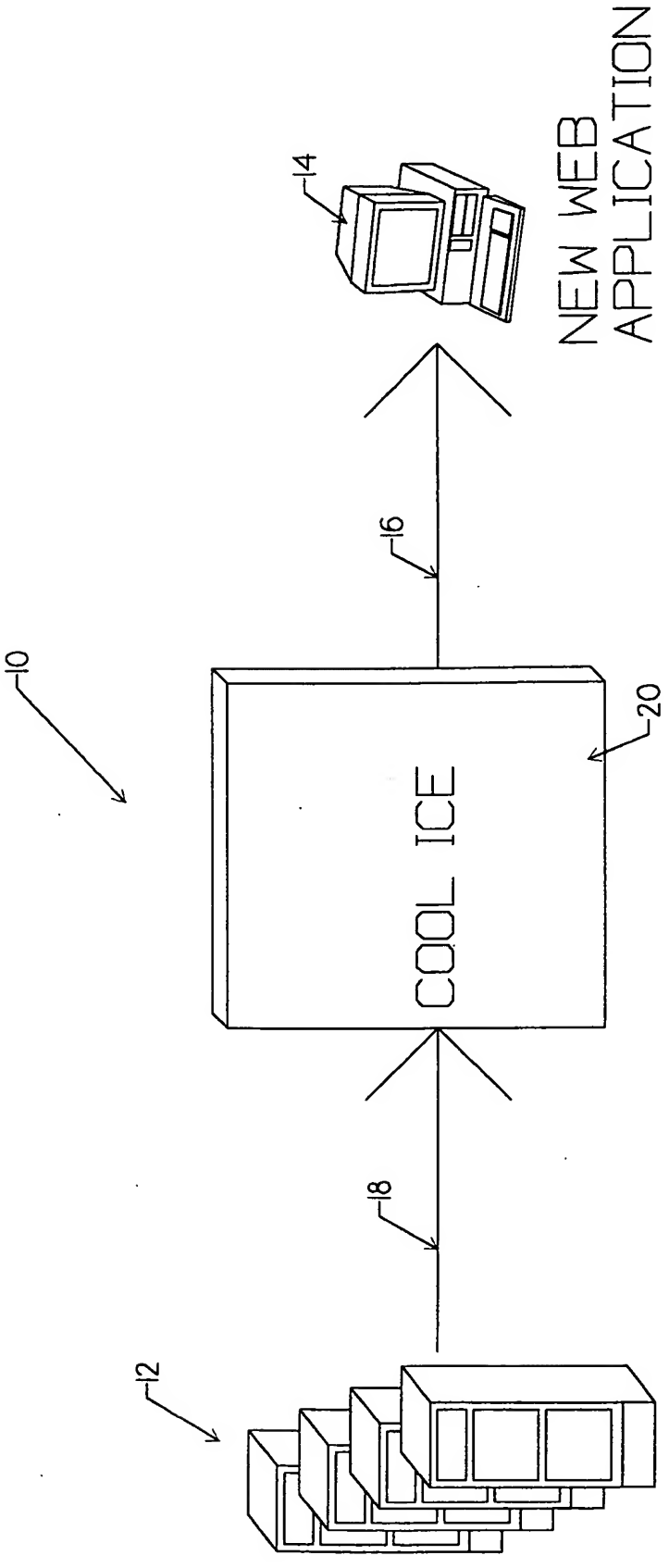
14
NEW WEB APPLICATION
16
10
20
COOL ICE
18
12
EXISTING DATABASES AND APPLICATIONS

FIG. 1

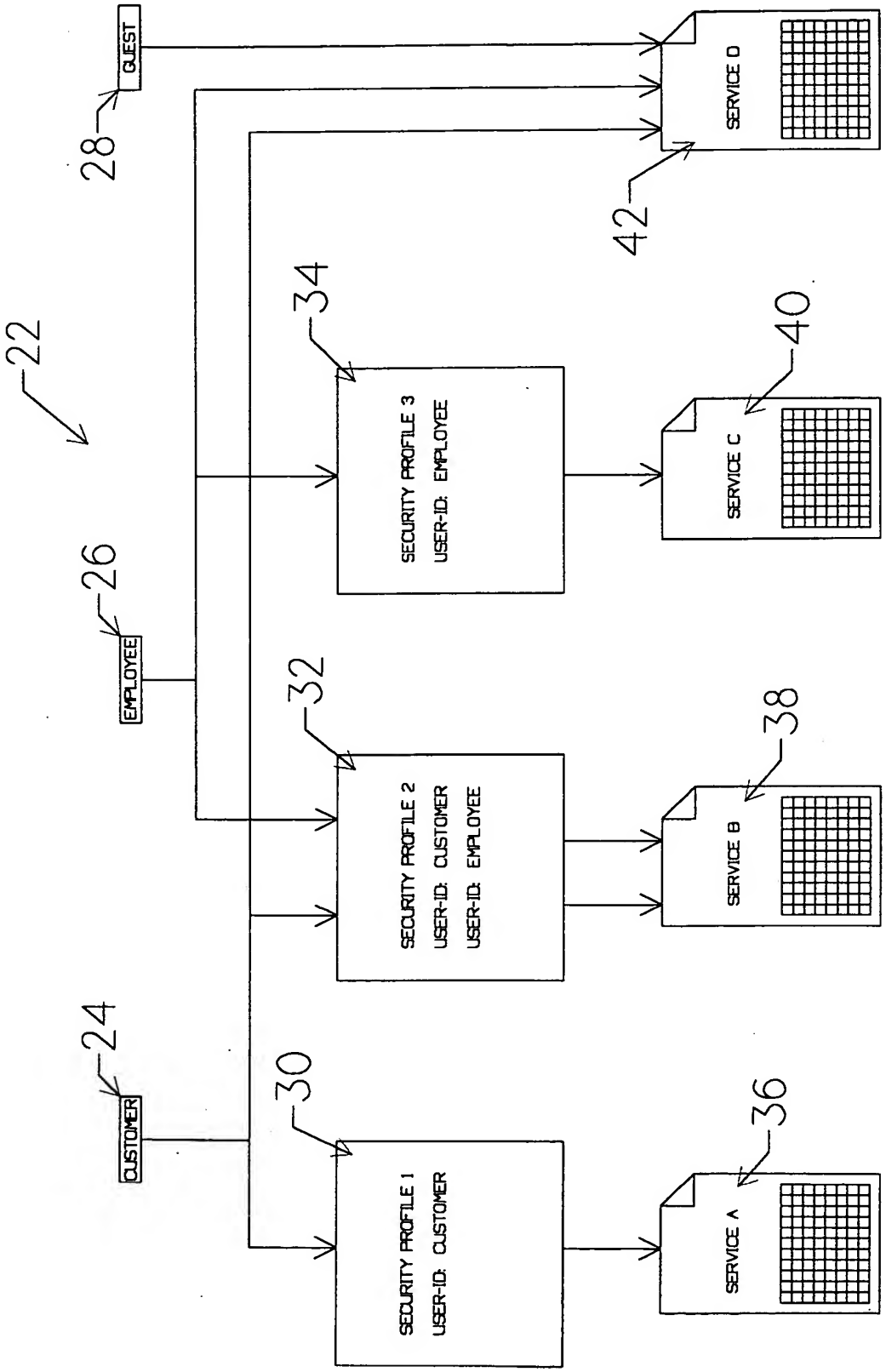
22
24
CUSTOMER
26
EMPLOYEE
28
GUEST
30
SECURITY PROFILE 1
USER-ID: CUSTOMER
32
SECURITY PROFILE 2
USER-ID: CUSTOMER
USER-ID: EMPLOYEE
34
SECURITY PROFILE 3
USER-ID: EMPLOYEE
36
SERVICE A
38
SERVICE B
40
SERVICE C
42
SERVICE D

FIG. 2

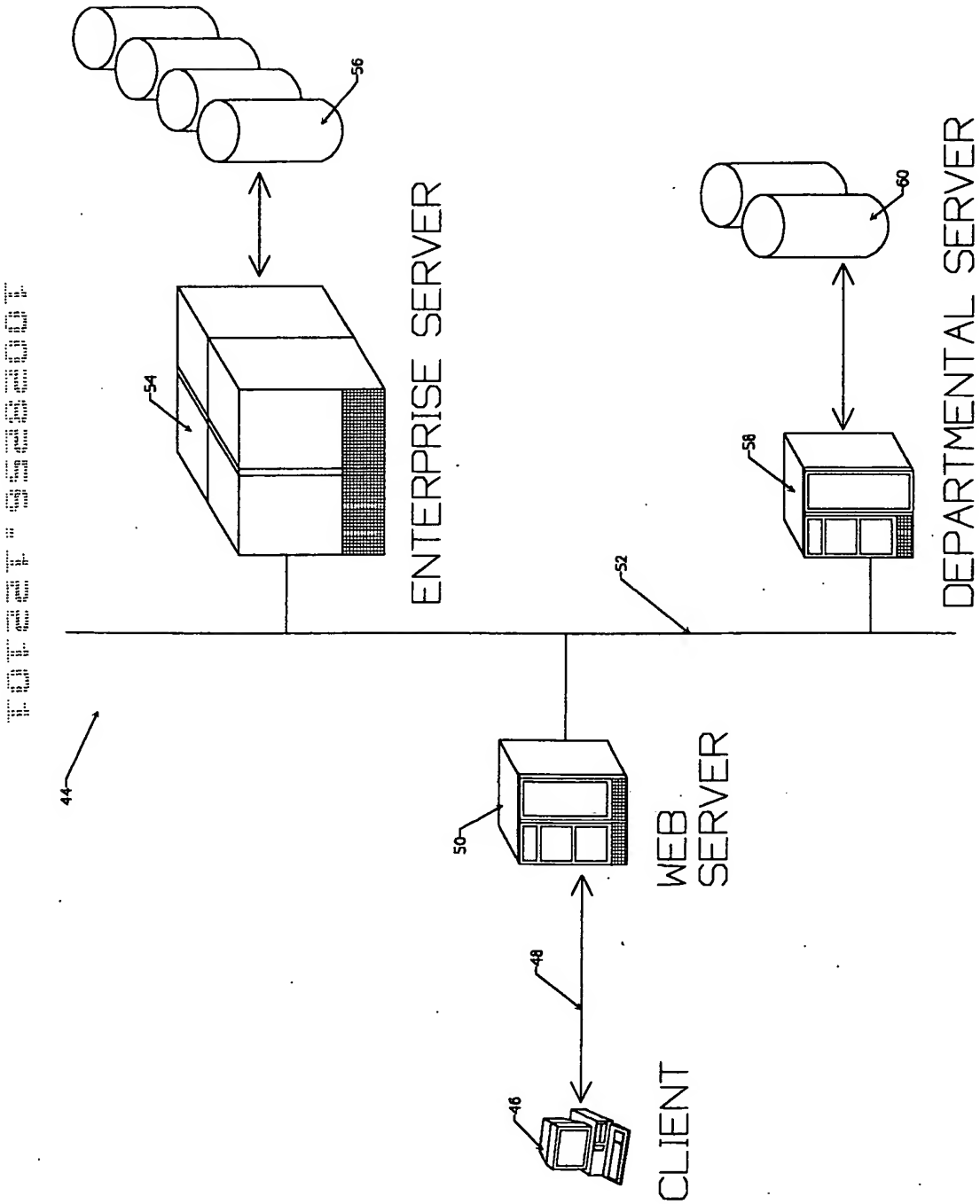
56
ENTERPRISE SERVER
54
60
DEPARTMENTAL SERVER
58
52
44
50
WEB SERVER
48
46
CLIENT

FIG. 3

Patent Application
Filing Date: 12/21/2001
Express Mail No. ET970414370US
Customer Assignment No. 27516
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 04 of 40

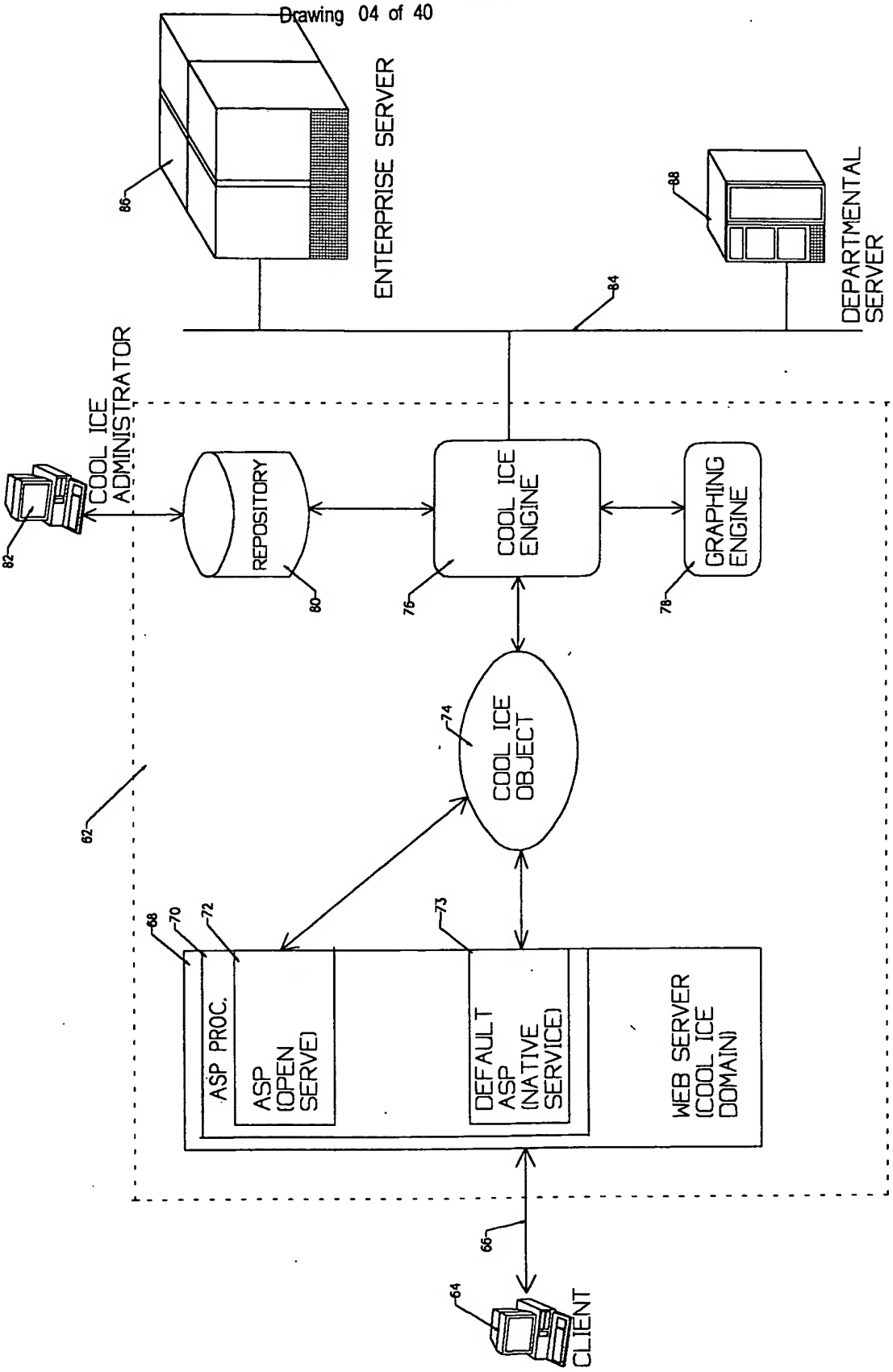

FIG. 4

Patent Application
Filing Date: 12/21/2001
Atty's Docket No. RA-5447 (3301/2335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing, 05 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

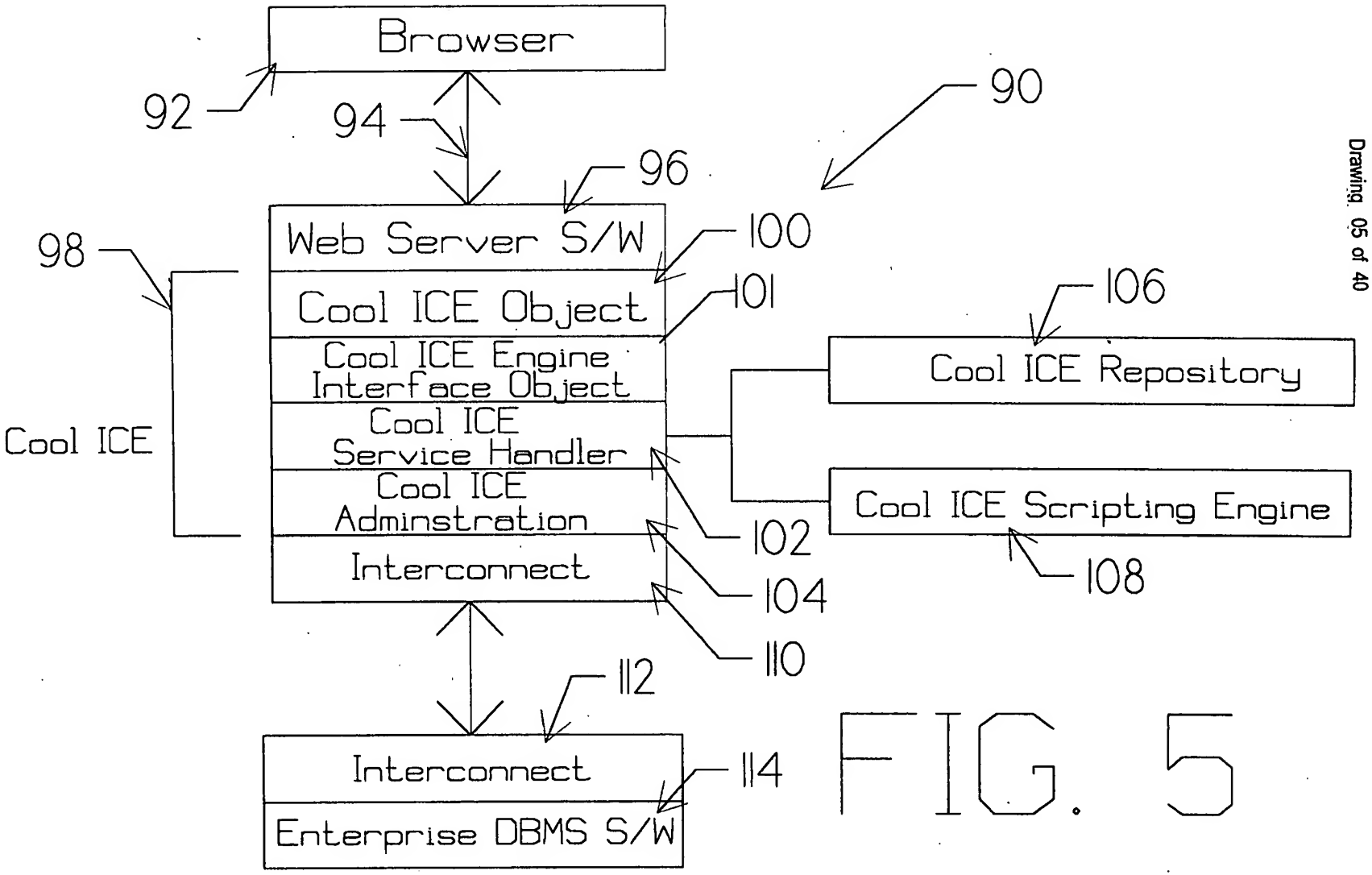

FIG. 5

Express Mail No. ET970414370US
Customer Assignment No. 27516

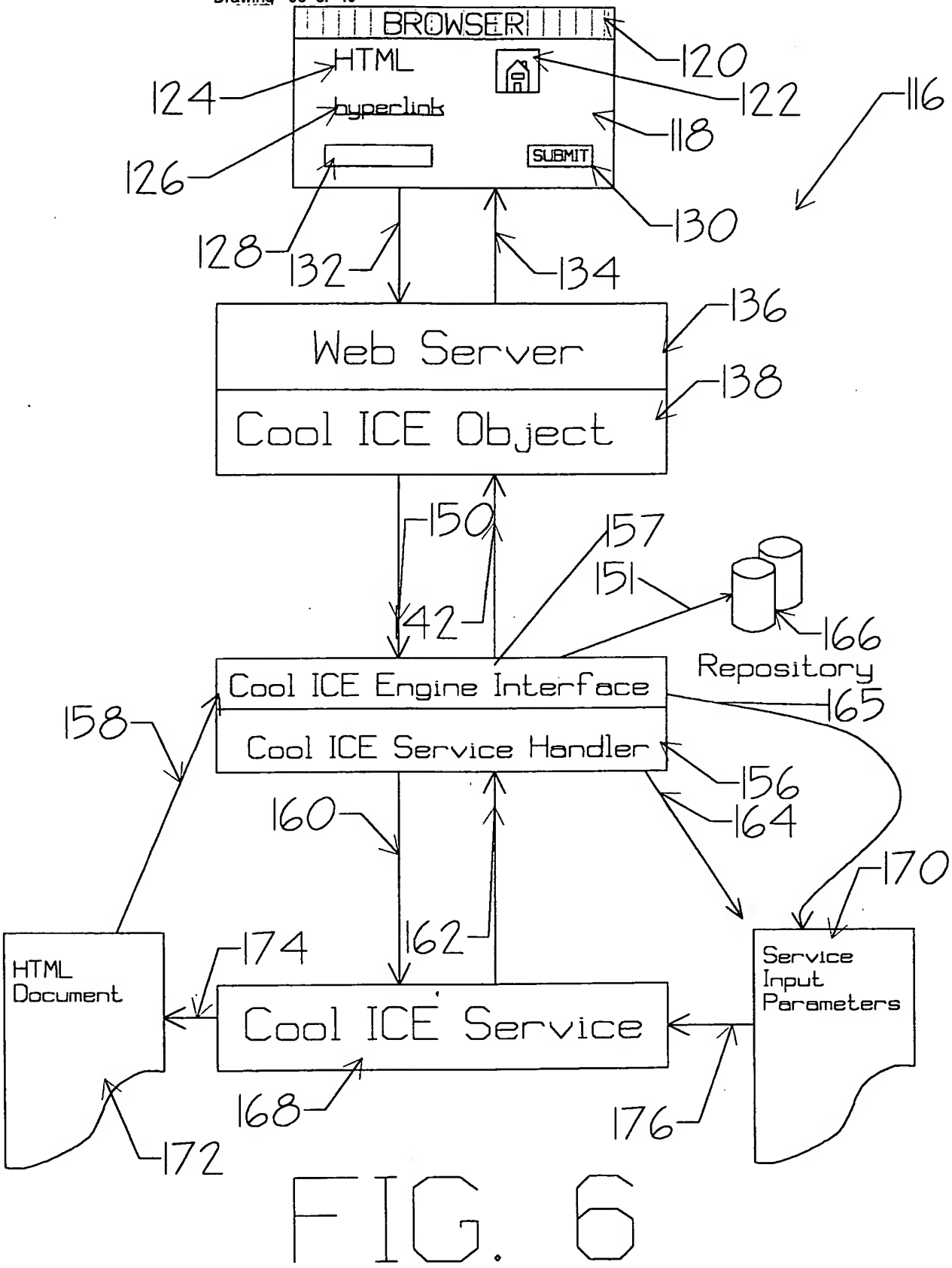

FIG. 6

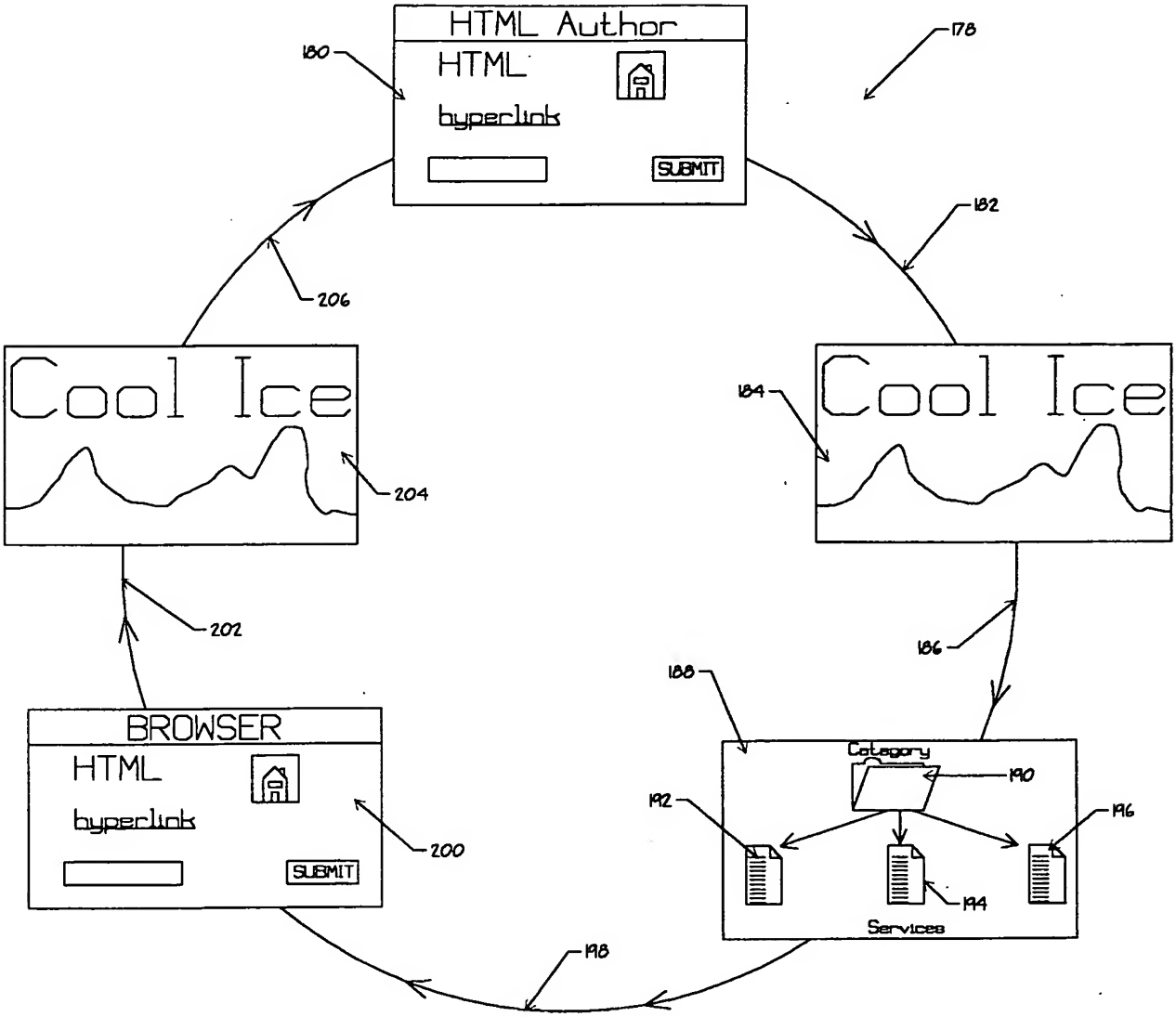
HTML Author
HTML
hyperlink
SUBMIT
180
178
182
206
Cool Ice
204
Cool Ice
184
202
186
188
BROWSER
HTML
hyperlink
SUBMIT
200
Category
190
192
196
194
Services
198

FIG. 7

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 08 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

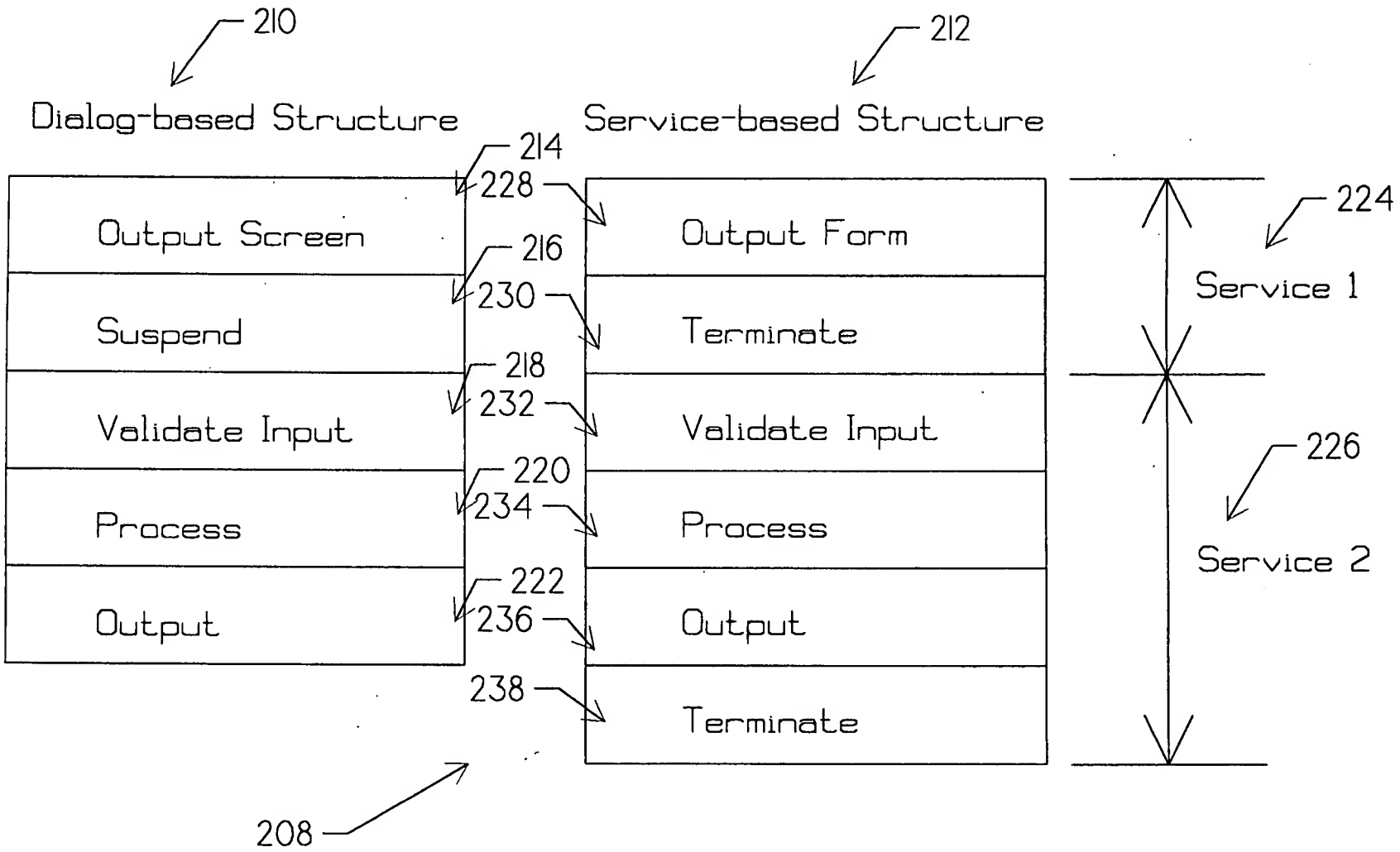

FIG. 8

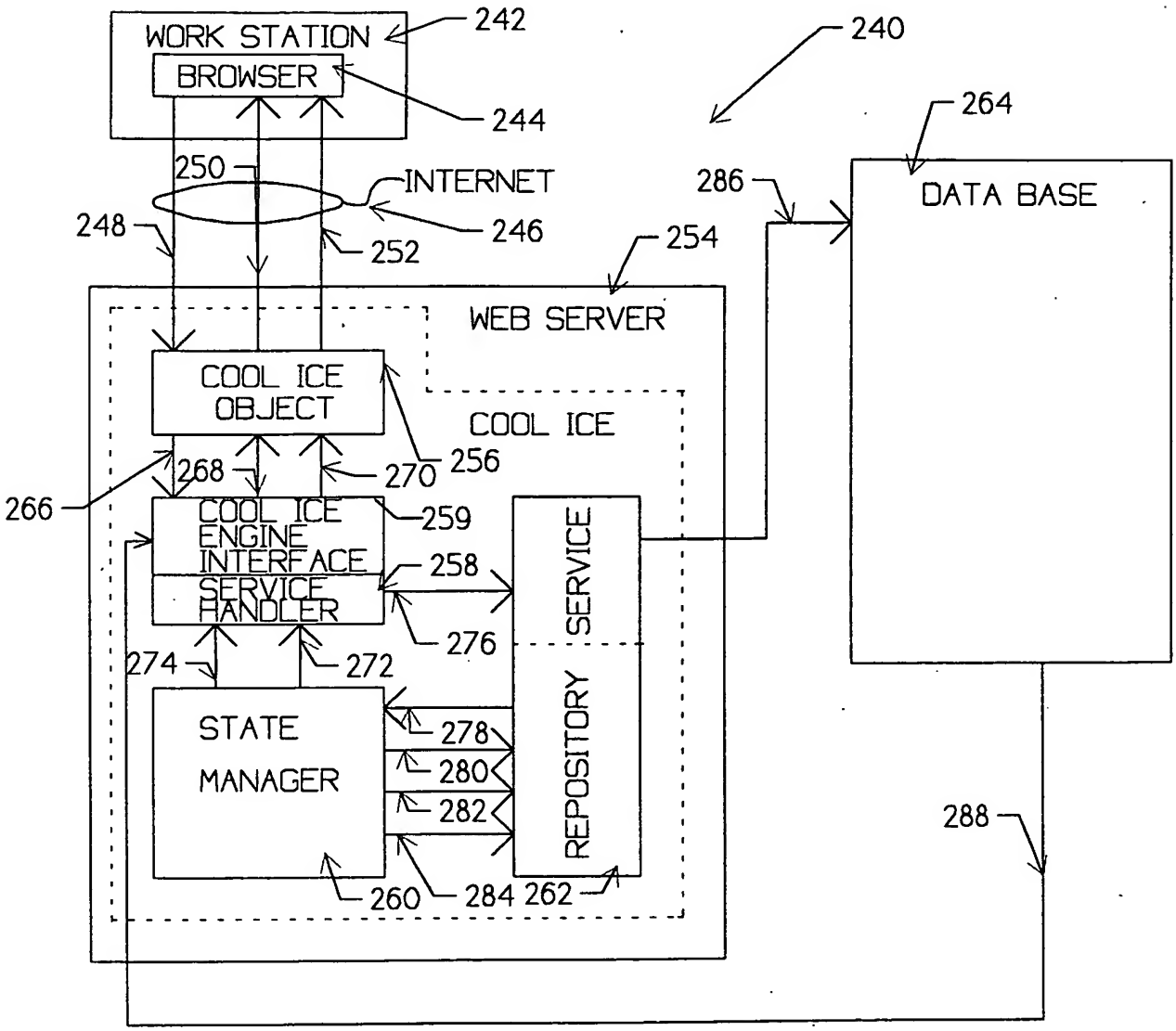
WORK STATION
BROWSER
242
244
240
264
250
INTERNET
286
DATA BASE
248
246
252
254
WEB SERVER
COOL ICE OBJECT
COOL ICE
256
268
270
266
COOL ICE ENGINE INTERFACE
259
258
SERVICE HANDLER
276
SERVICE
274
272
STATE MANAGER
278
280
282
REPOSITORY
288
260
284
262

FIG. 9

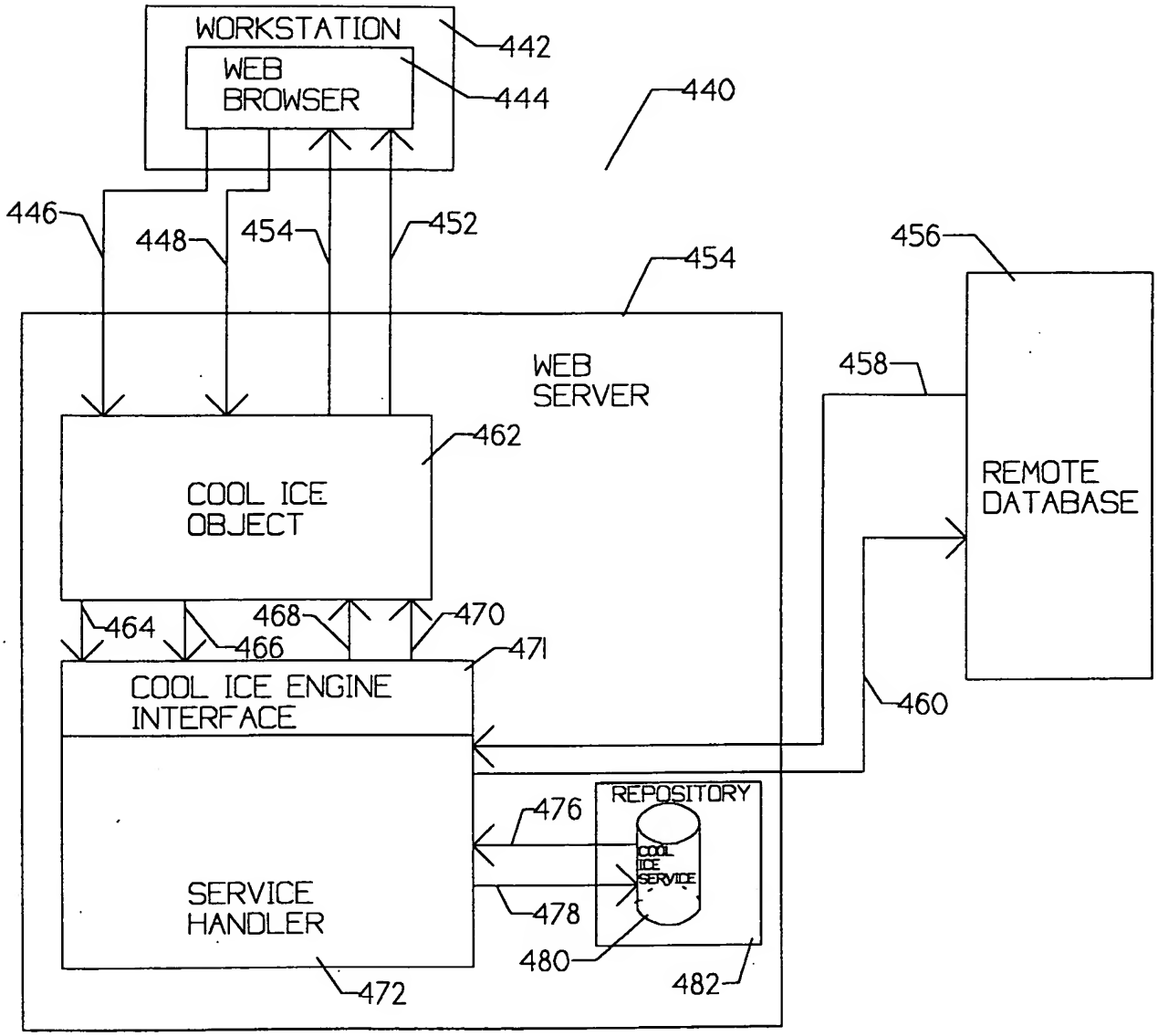
WORKSTATION
WEB BROWSER
442
444
440
446
448
454
452
454
456
WEB SERVER
458
462
COOL ICE OBJECT
REMOTE DATABASE
464
466
468
470
471
COOL ICE ENGINE INTERFACE
460
REPOSITORY
476
COOL ICE SERVICE
SERVICE HANDLER
478
480
482
472

FIG. 10

Express Mail No. ET970414370US
[illegible]omer Assignment No. 27516

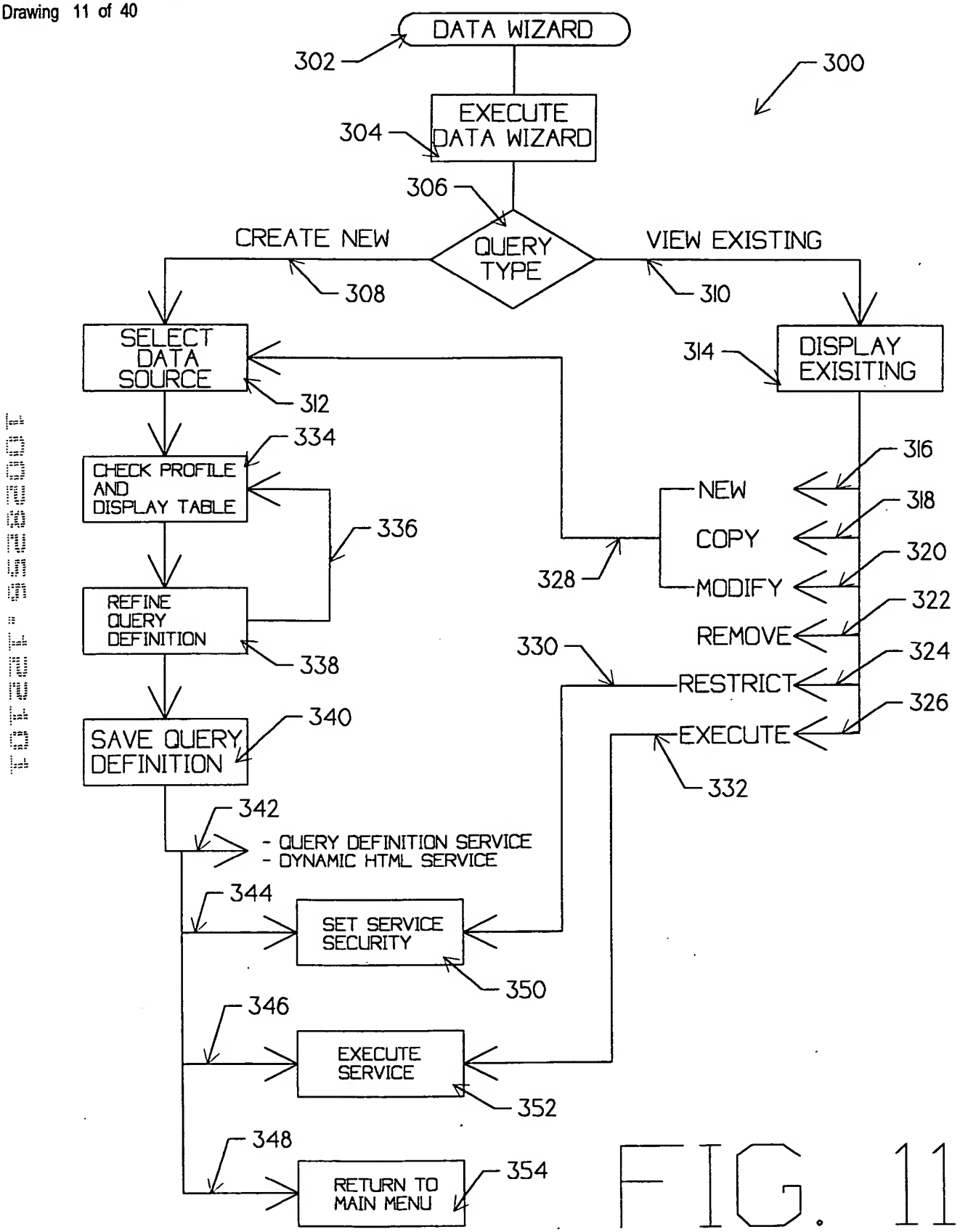

FIG. 11

Express Mail No. ET970414370US
Customer Assignment No. 27516

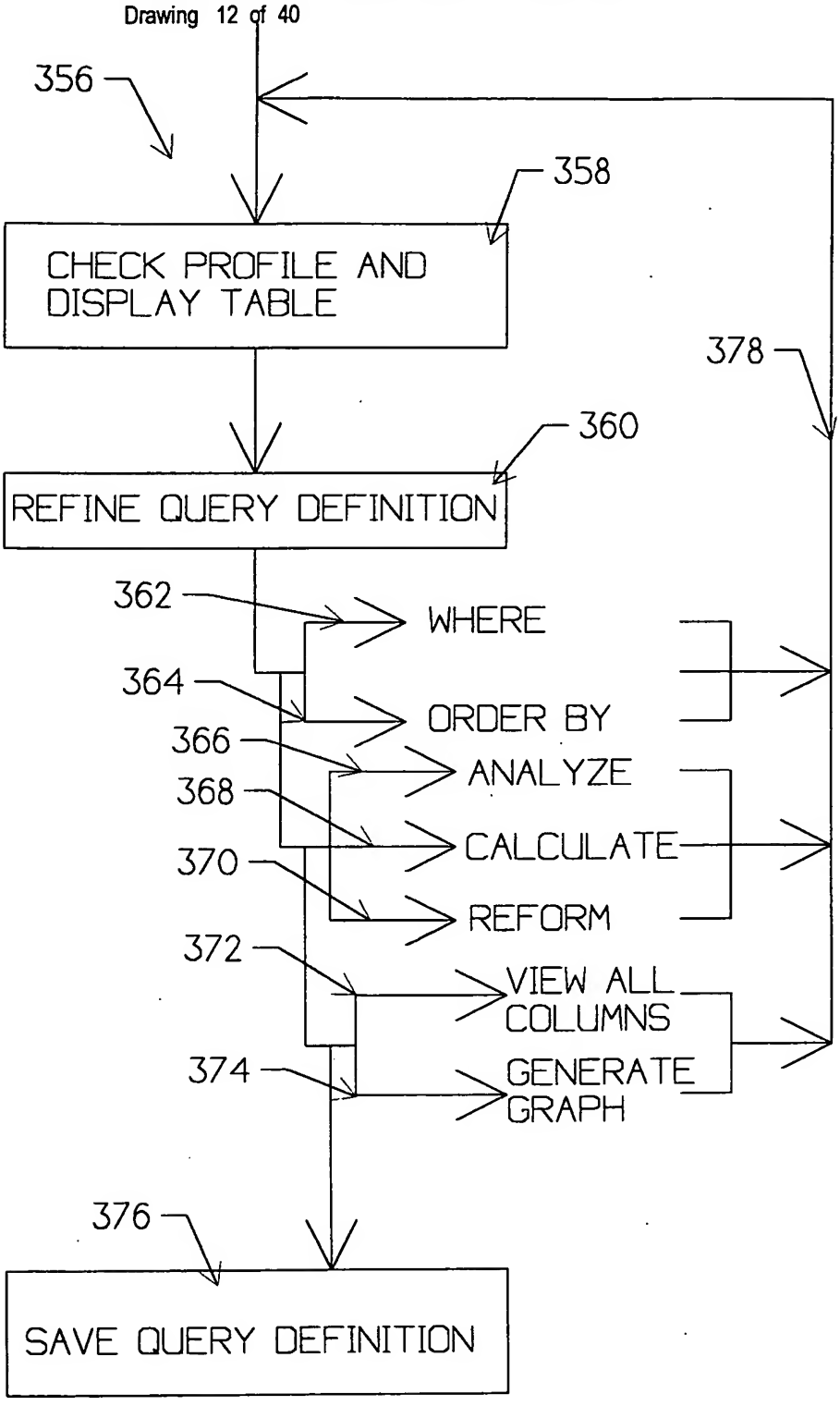

FIG. 12

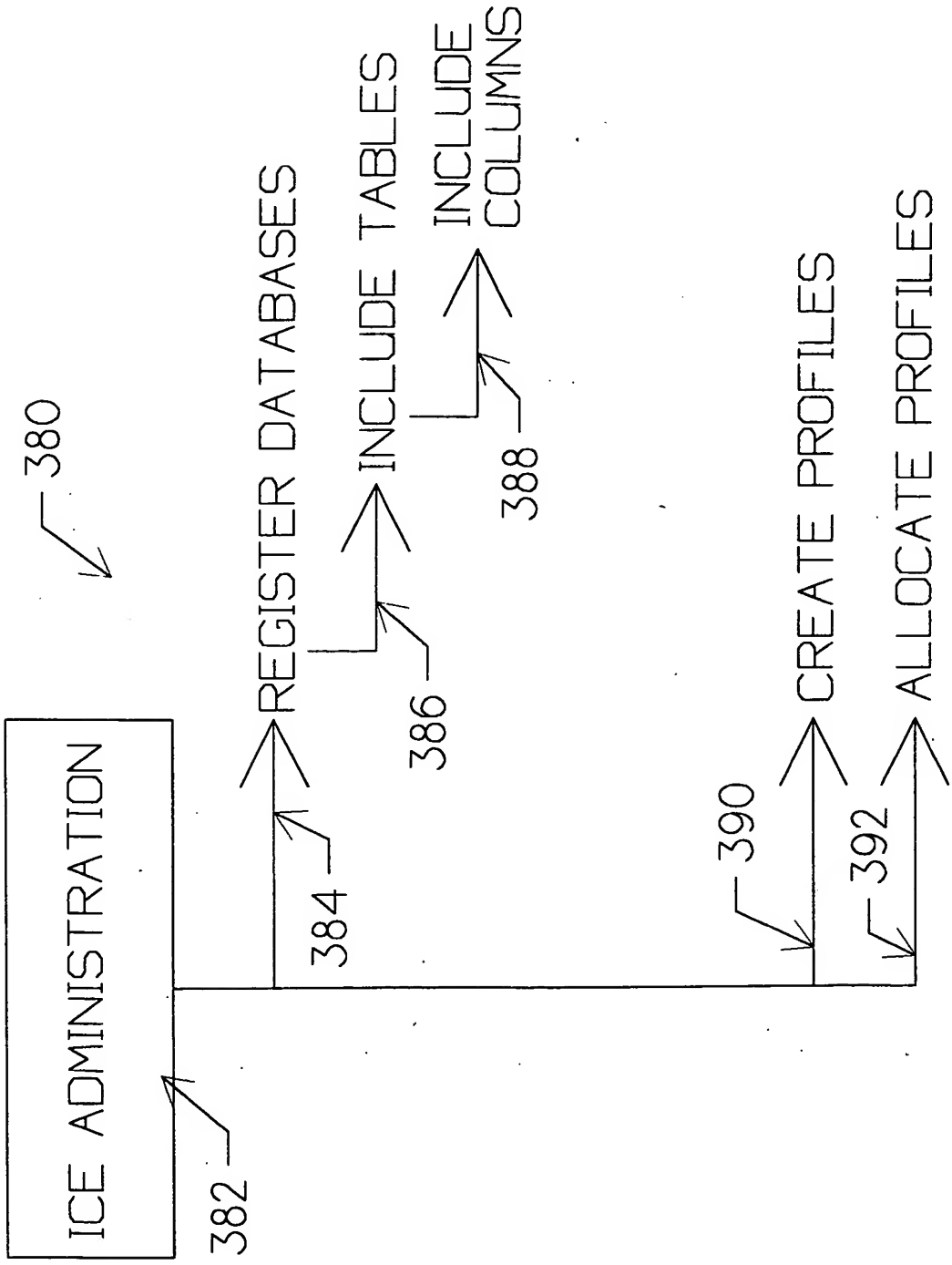
ICE ADMINISTRATION
382
380
REGISTER DATABASES
384
INCLUDE TABLES
386
INCLUDE COLUMNS
388
CREATE PROFILES
390
ALLOCATE PROFILES
392

FIG. 13

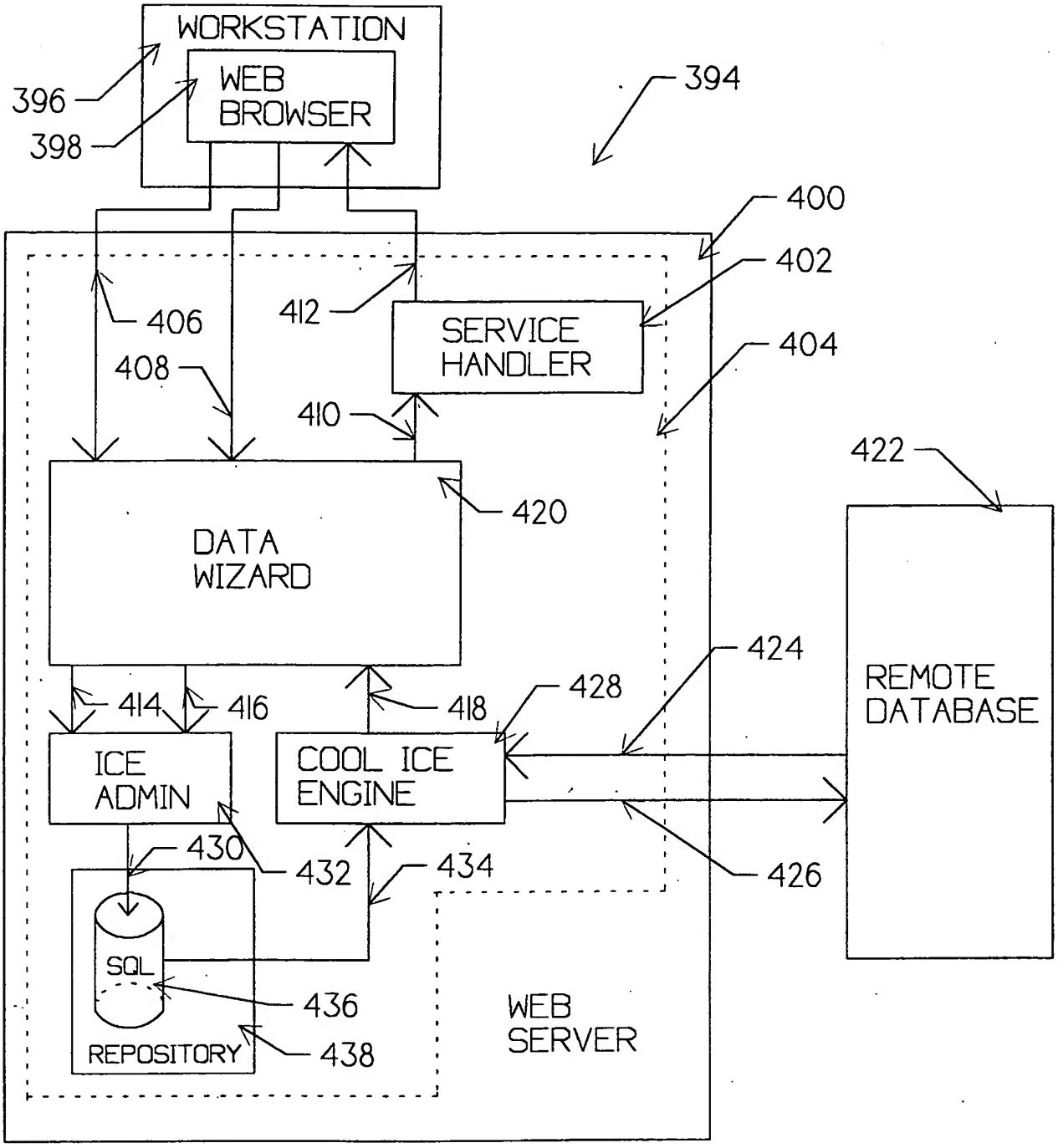
WORKSTATION
WEB BROWSER
396
398
394
400
402
404
406
408
410
412
SERVICE HANDLER
DATA WIZARD
420
422
REMOTE DATABASE
424
414
416
418
428
ICE ADMIN
COOL ICE ENGINE
426
430
432
434
SQL
436
REPOSITORY
438
WEB SERVER

FIG. 14

Express Mail No. ET970414370US
Customer Assignment No. [redacted]516

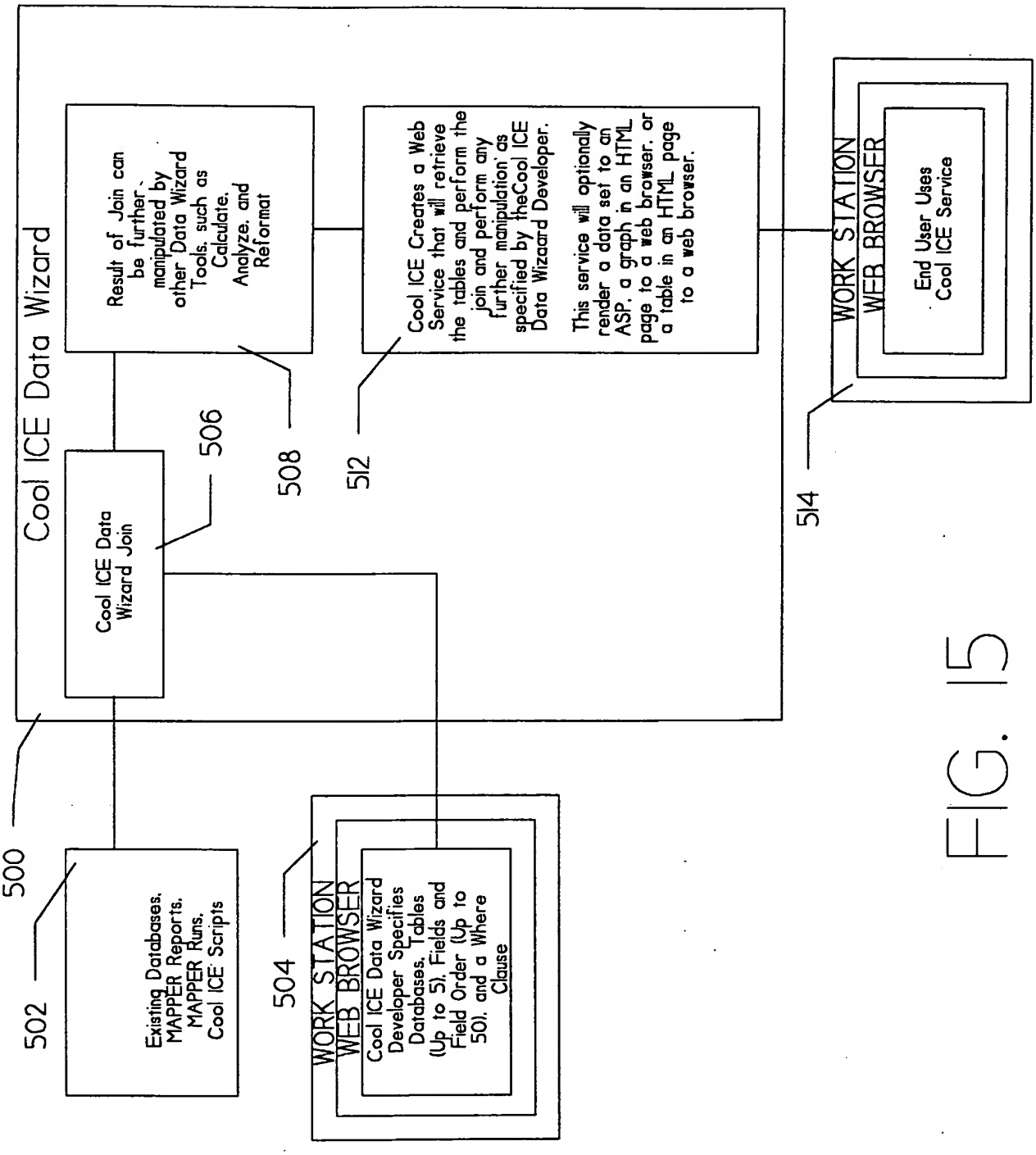

FIG. 15

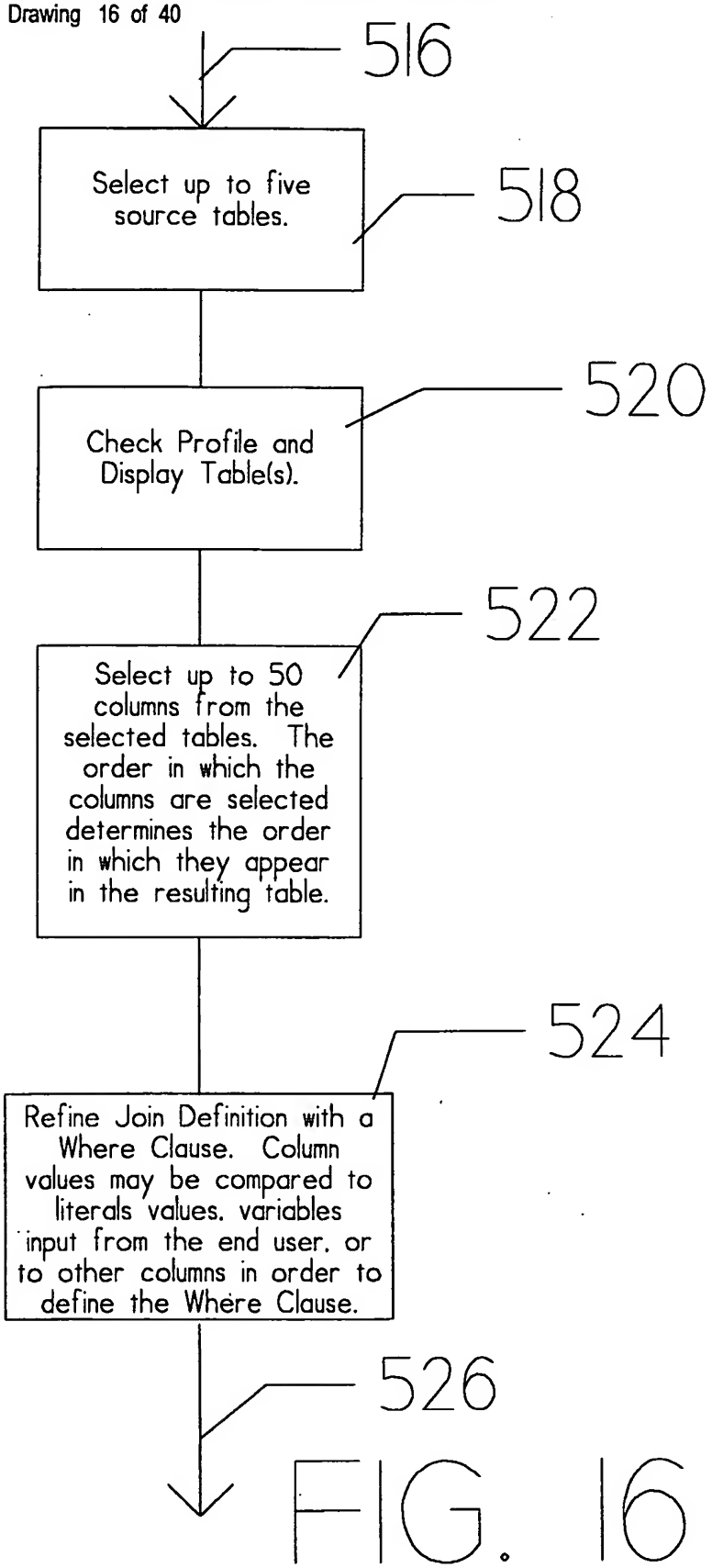
516
Select up to five source tables.
518
Check Profile and Display Table(s).
520
Select up to 50 columns from the selected tables. The order in which the columns are selected determines the order in which they appear in the resulting table.
522
Refine Join Definition with a Where Clause. Column values may be compared to literals values. variables input from the end user. or to other columns in order to define the Where Clause.
524
526

FIG. 16

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 17 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

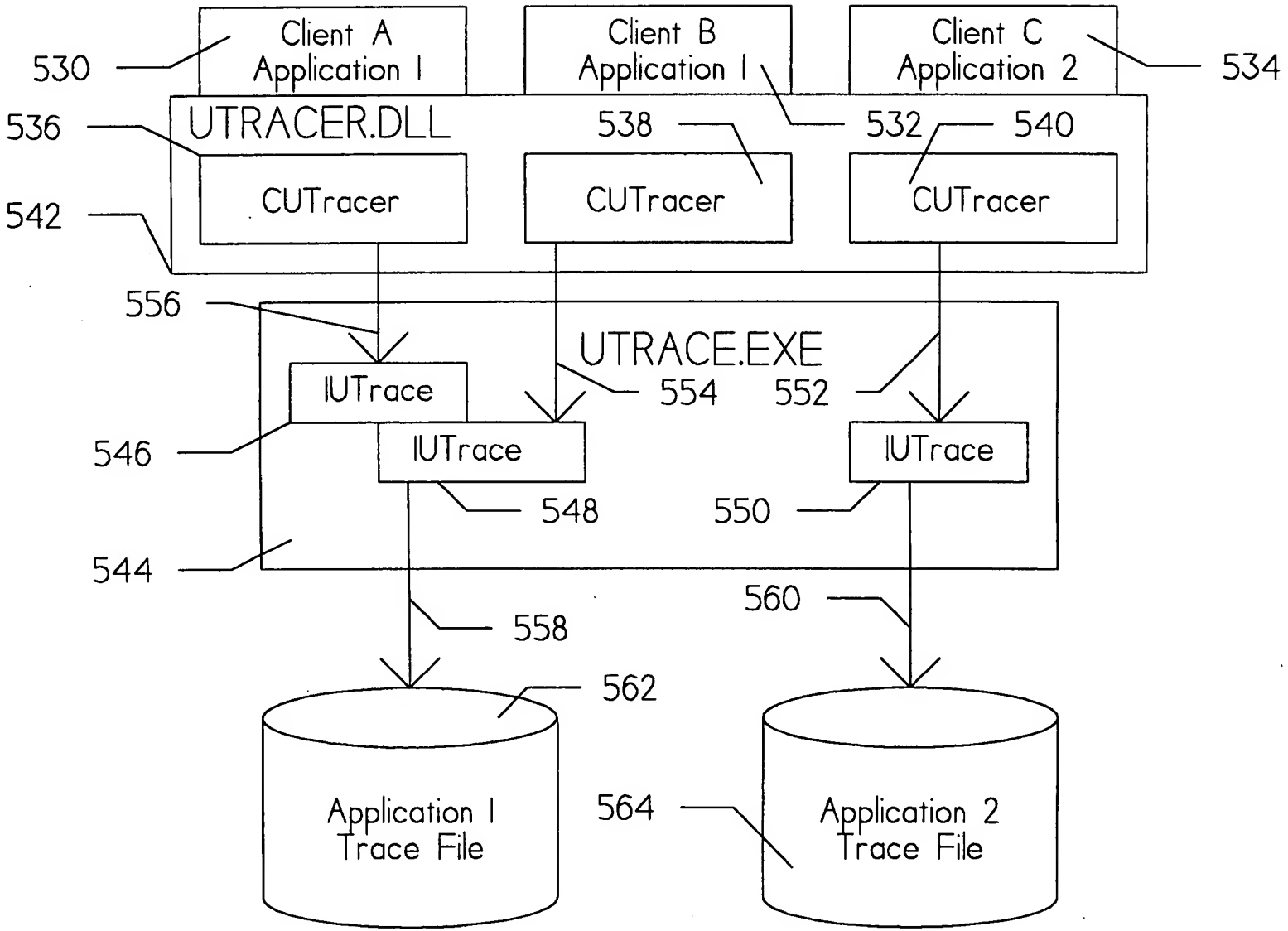

FIG. 17

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 18 of 40
Express Mail No. ET970414370US
Customer Assignee No. 27516

HKLM\SOFTWARE\UNISYS\UTRACE

APPNAME -- Subkey matching the name of the application 565

- ENABLETRACE -- DWORD value indication a Boolean (1=trace.. 0=no trace).
- MAXENTRIES -- DWORD value indicating the maximum number of entries in the trace file. If missing. then no upper limit is imposed.
- FORMATFLAGS -- DWORD value indicating message formatting flags.
- POLICYFLAGS -- DWORD value indicating trace policy flags set for the application.
- TRACELEVEL -- DWORD value indicating a trace level. 0 = no trace.
- TRACEPATH -- String value indicating the directory path for the trace files.
- REGTRACE -- A string value containing the HKLM\Software sub key to trace for this application. Blank or missing for no registry trace.
- COMPONENT -- A subkey for a specific component of the application.
  - POLICYFLAGS -- Value indicating component level trace policy flags
  - TRACELEVEL -- DWORD Value indicating a trace level. 0 = no trace.
  - VERSIONTRACE-- String value specifying executable component name for version information tracing.

FIG. 18

Express Mail No. ET970414370US
Customer Assignment No. 27516

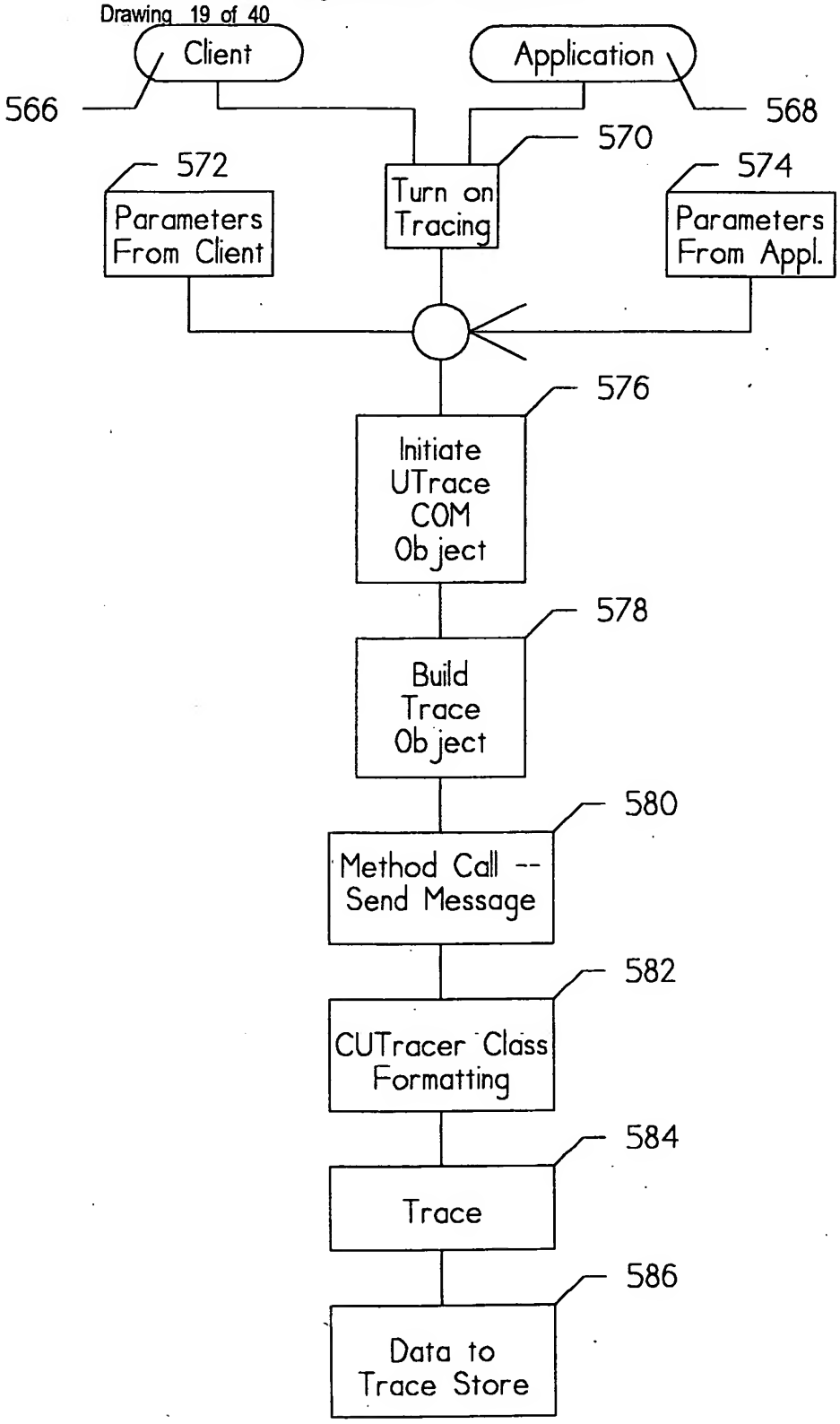

FIG. 19

```
#define CI_TRACE_VERSION        0x1
#define CI_TRACE_ERROR          0x2
#define CI_TRACE_INTERFACE      0x4
#define CI_TRACE_FLOW           0x8
#define CI_TRACE_DETAIL         0x10
```

FIG. 20A

```
if (m_trace. Active(C)_TRACE_DETAIL))
m_trace<<"MY Detailed Trace information"<<Localvariable<<traceit
```

FIG. 20B

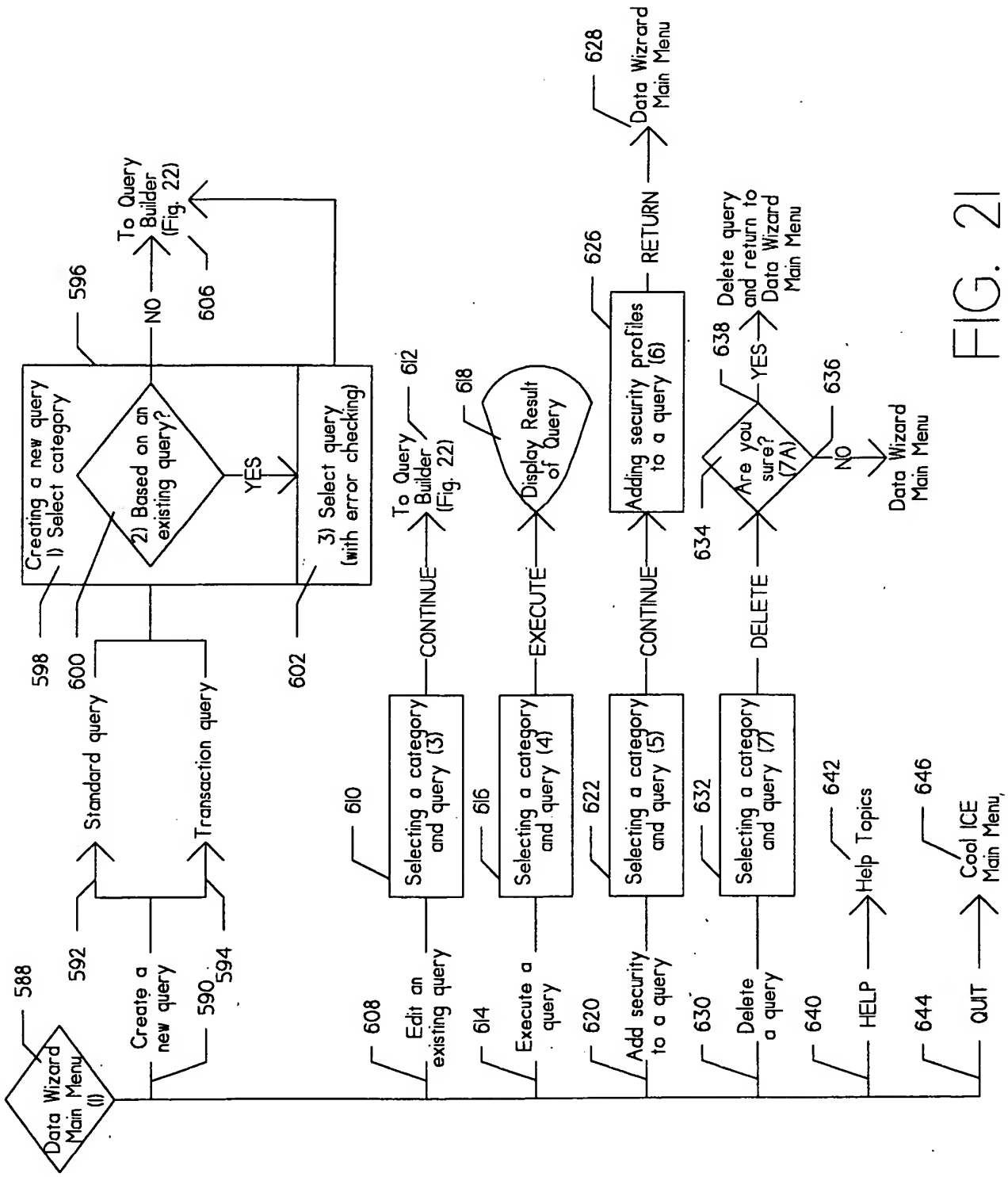
588
Data Wizard Main Menu (1)
592
Create a new query
590
594
Standard query
Transaction query
596
Creating a new query 1) Select category
2) Based on an existing query?
YES
NO
606
To Query Builder (Fig. 22)
598
600
602
3) Select query (with error checking)
608
Edit an existing query
610
Selecting a category and query (3)
CONTINUE
612
To Query Builder (Fig. 22)
614
Execute a query
616
Selecting a category and query (4)
EXECUTE
618
Display Result of Query
620
Add security to a query
622
Selecting a category and query (5)
CONTINUE
626
Adding security profiles to a query (6)
RETURN
628
Data Wizard Main Menu
630
Delete a query
632
Selecting a category and query (7)
DELETE
634
Are you sure? (7A)
YES
638
Delete query and return to Data Wizard Main Menu
NO
636
Data Wizard Main Menu
640
HELP
642
Help Topics
644
QUIT
646
Cool ICE Main Menu

FIG. 21

Express Mail No. ET970414370US
Customer Assignment No. 27516

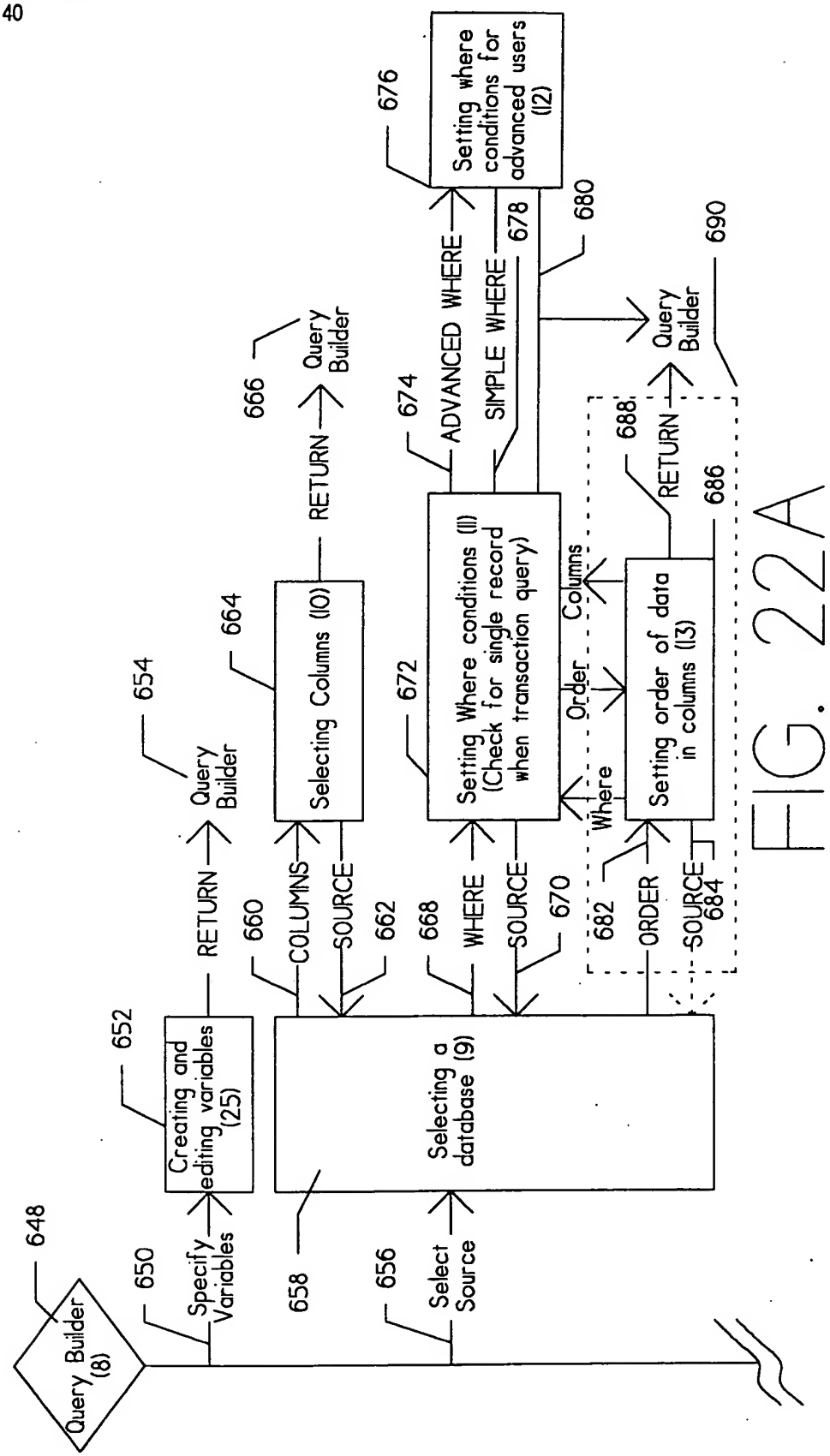

FIG. 22A

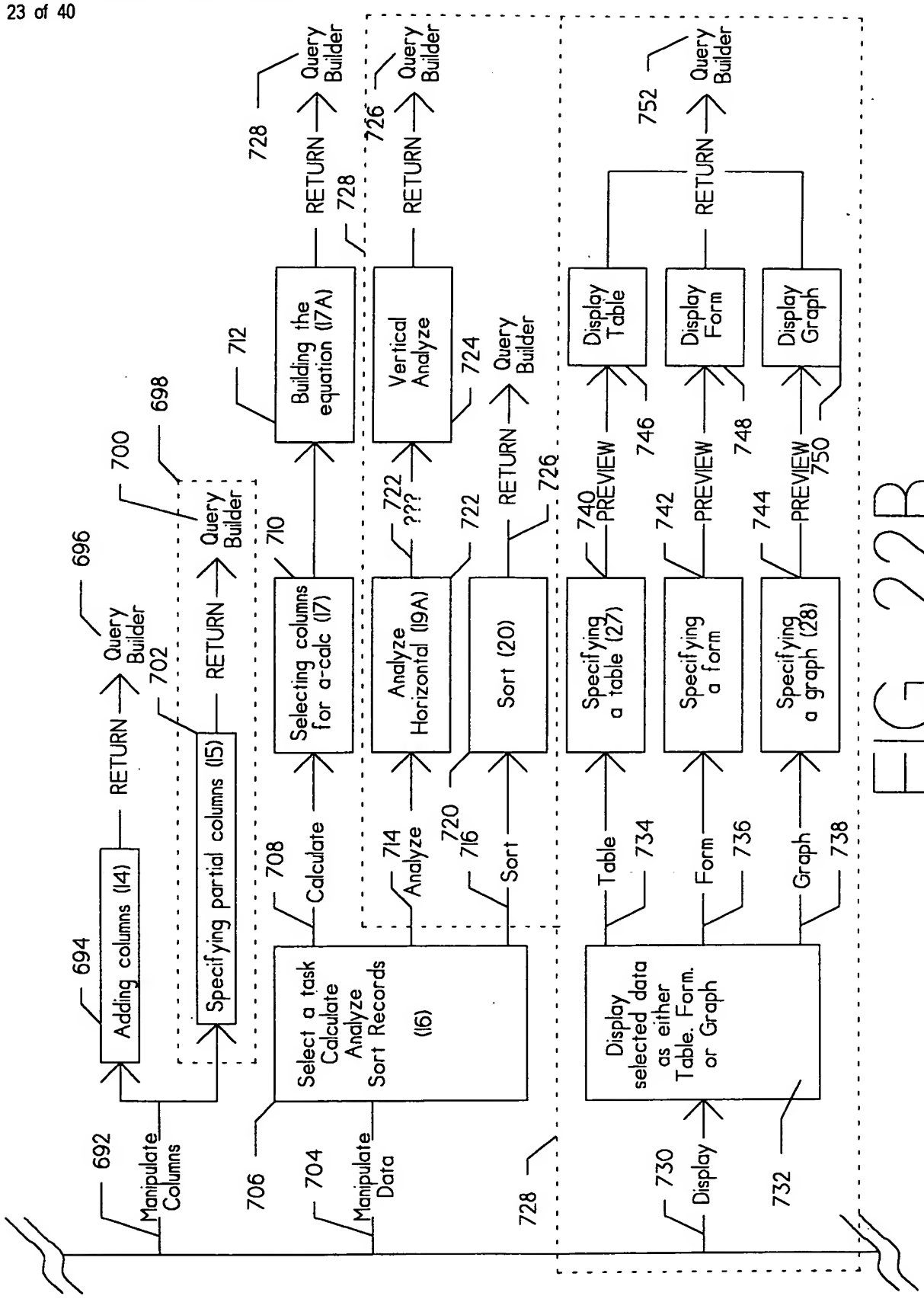
692
Manipulate Columns
694
Adding columns (14)
RETURN
696
Query Builder
698
700
Query Builder
702
Specifying partial columns (15)
RETURN
704
Manipulate Data
706
Select a task
Calculate
Analyze
Sort Records
(16)
708
Calculate
710
Selecting columns for a-calc (17)
712
Building the equation (17A)
RETURN
728
Query Builder
714
Analyze
720
722
???
Analyze Horizontal (19A)
722
726
Vertical Analyze
724
RETURN
Query Builder
716
Sort
Sort (20)
RETURN
726
728
730
Display
Display selected data as either Table. Form. or Graph
732
734
Table
740
PREVIEW
Specifying a table (27)
746
Display Table
RETURN
752
Query Builder
736
Form
742
PREVIEW
Specifying a form
748
Display Form
RETURN
738
Graph
744
PREVIEW
Specifying a graph (28)
750
Display Graph
RETURN

FIG. 22B

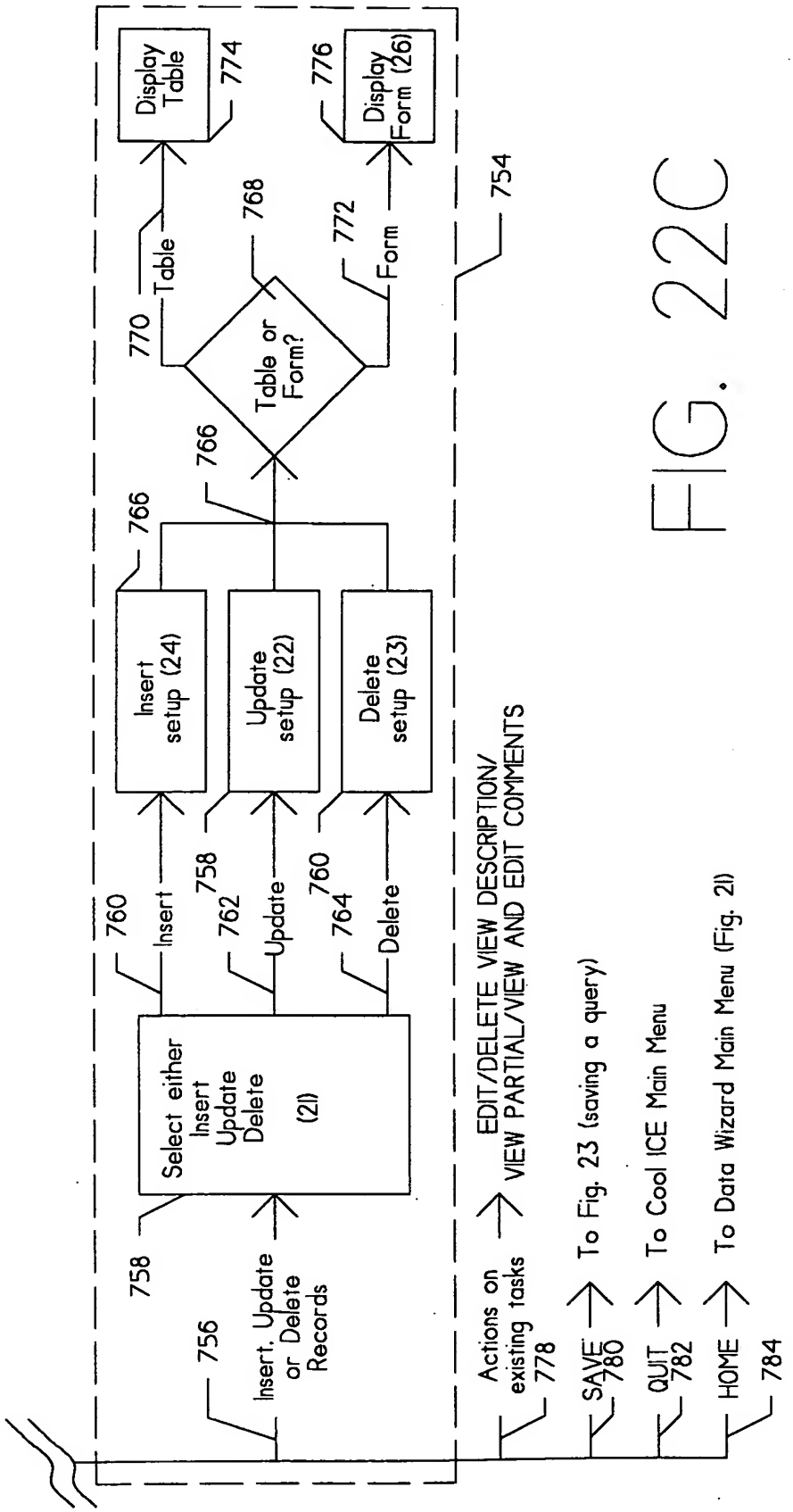
Display Table
774
776
Display Form (26)
754
768
772
Form
770
Table
Table or Form?
766
766
Insert setup (24)
Update setup (22)
Delete setup (23)
760
Insert
758
762
Update
760
764
Delete
Select either Insert Update Delete (21)
758
Insert, Update or Delete Records
756
EDIT/DELETE VIEW DESCRIPTION/ VIEW PARTIAL/VIEW AND EDIT COMMENTS
Actions on existing tasks
778
SAVE
780
To Fig. 23 (saving a query)
QUIT
782
To Cool ICE Main Menu
HOME
784
To Data Wizard Main Menu (Fig. 21)

FIG. 22C

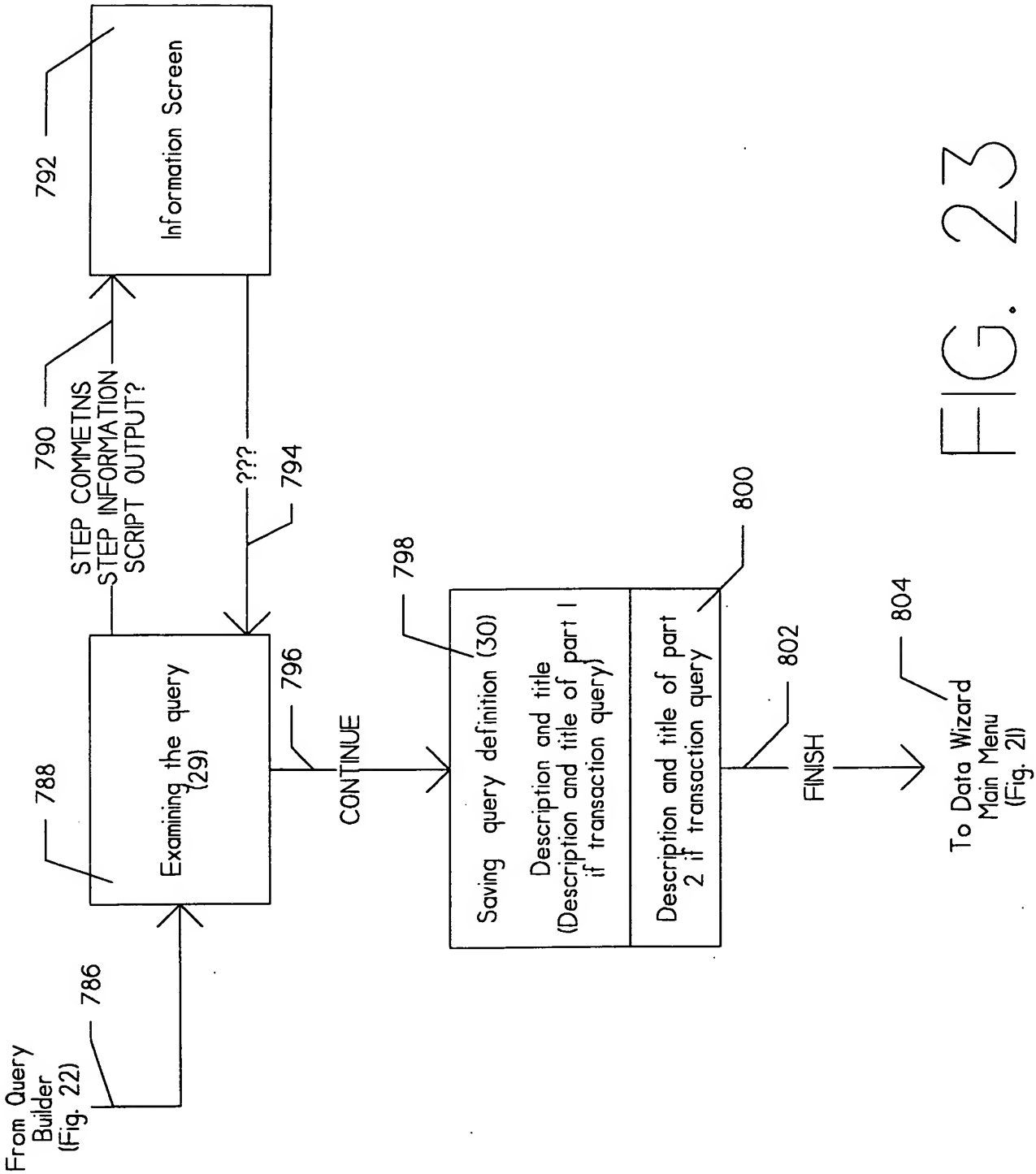
From Query Builder (Fig. 22)
786
Examining the query (29)
788
CONTINUE
796
???
794
STEP COMMETNS
STEP INFORMATION
SCRIPT OUTPUT?
790
Information Screen
792
Saving query definition (30)
Description and title (Description and title of part 1 if transaction query)
798
Description and title of part 2 if transaction query
800
FINISH
802
To Data Wizard Main Menu (Fig. 21)
804

FIG. 23

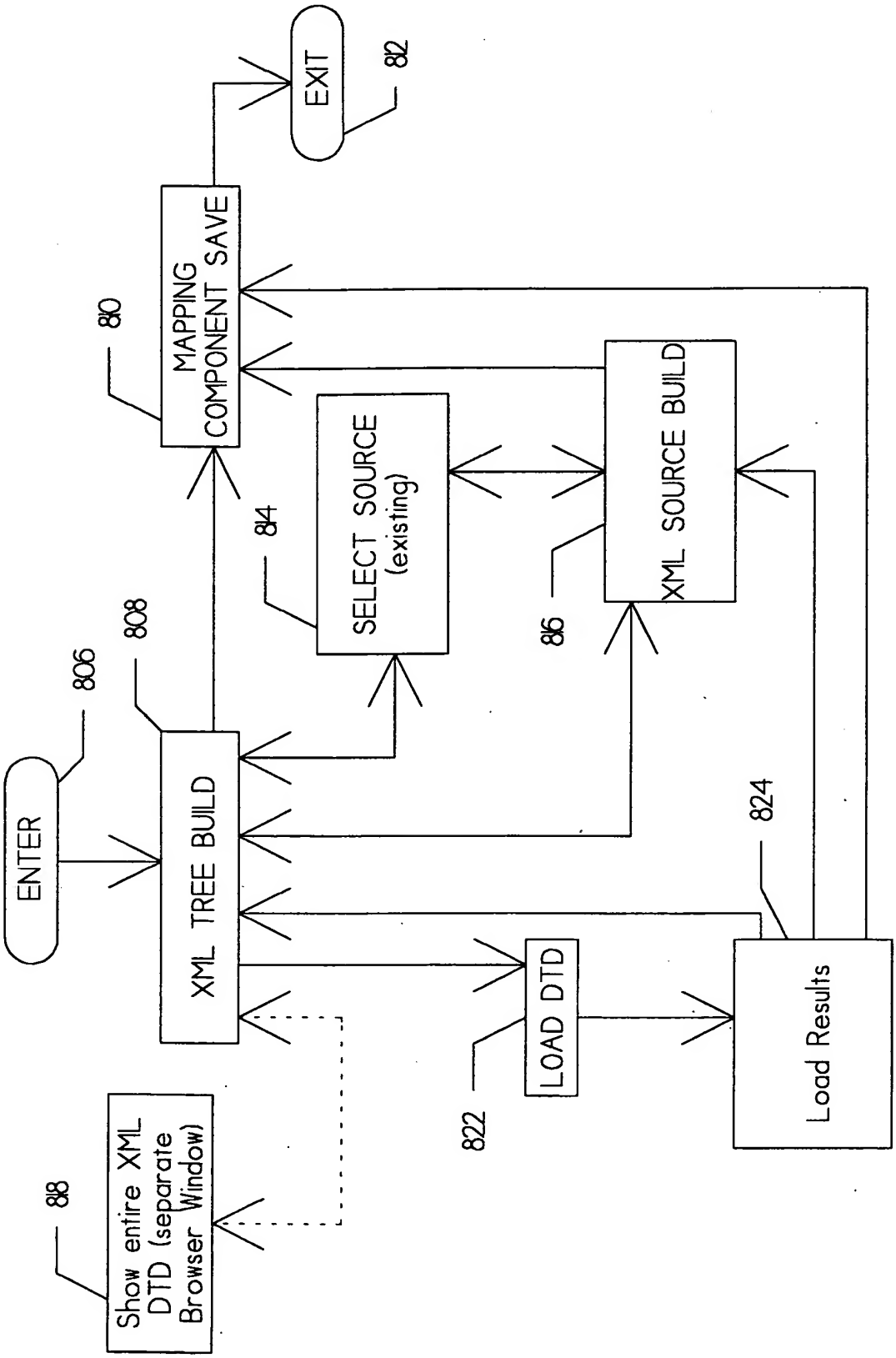
EXIT
82
MAPPING COMPONENT SAVE
80
SELECT SOURCE (existing)
84
XML SOURCE BUILD
86
ENTER
806
XML TREE BUILD
808
824
LOAD DTD
822
Load Results
Show entire XML DTD (separate Browser Window)
88

FIG. 24

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 27 of 40
Express Mail No. ET970414370US
Customer Assignment
27516

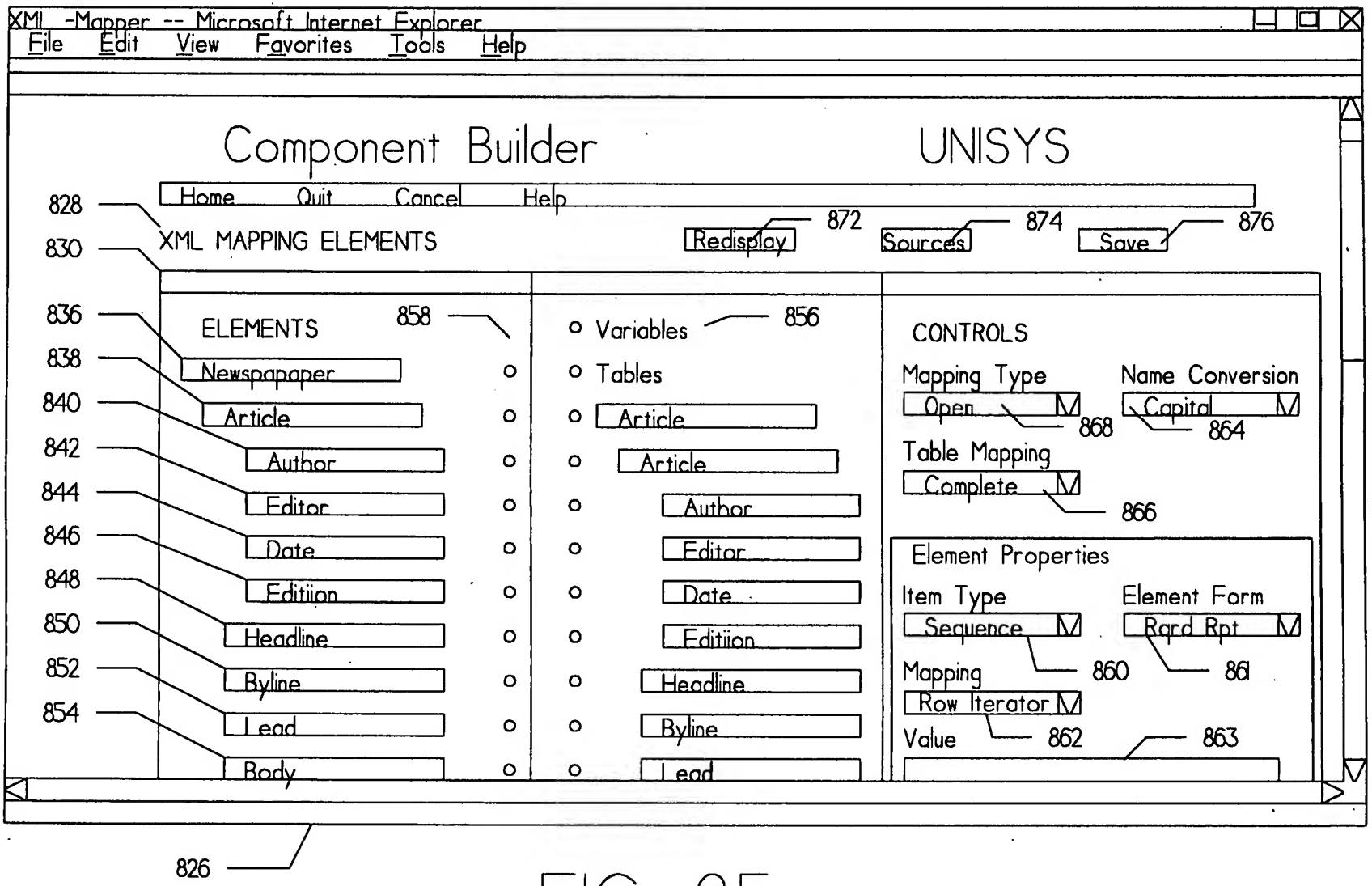

FIG. 25

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (330122335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 28 of 40
Express Mail No. ET970414370US
Customer Assignee No. 27516

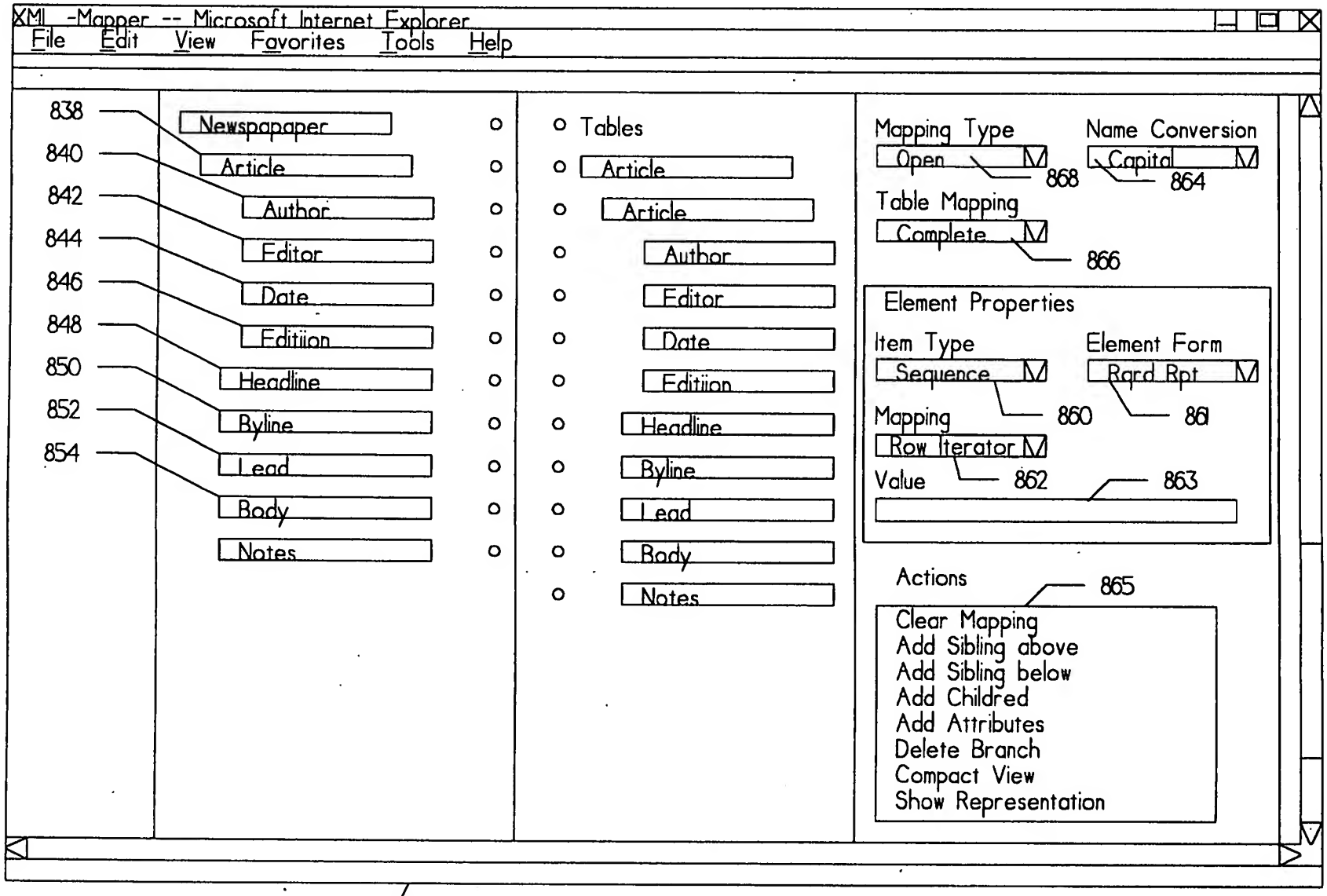

FIG. 26

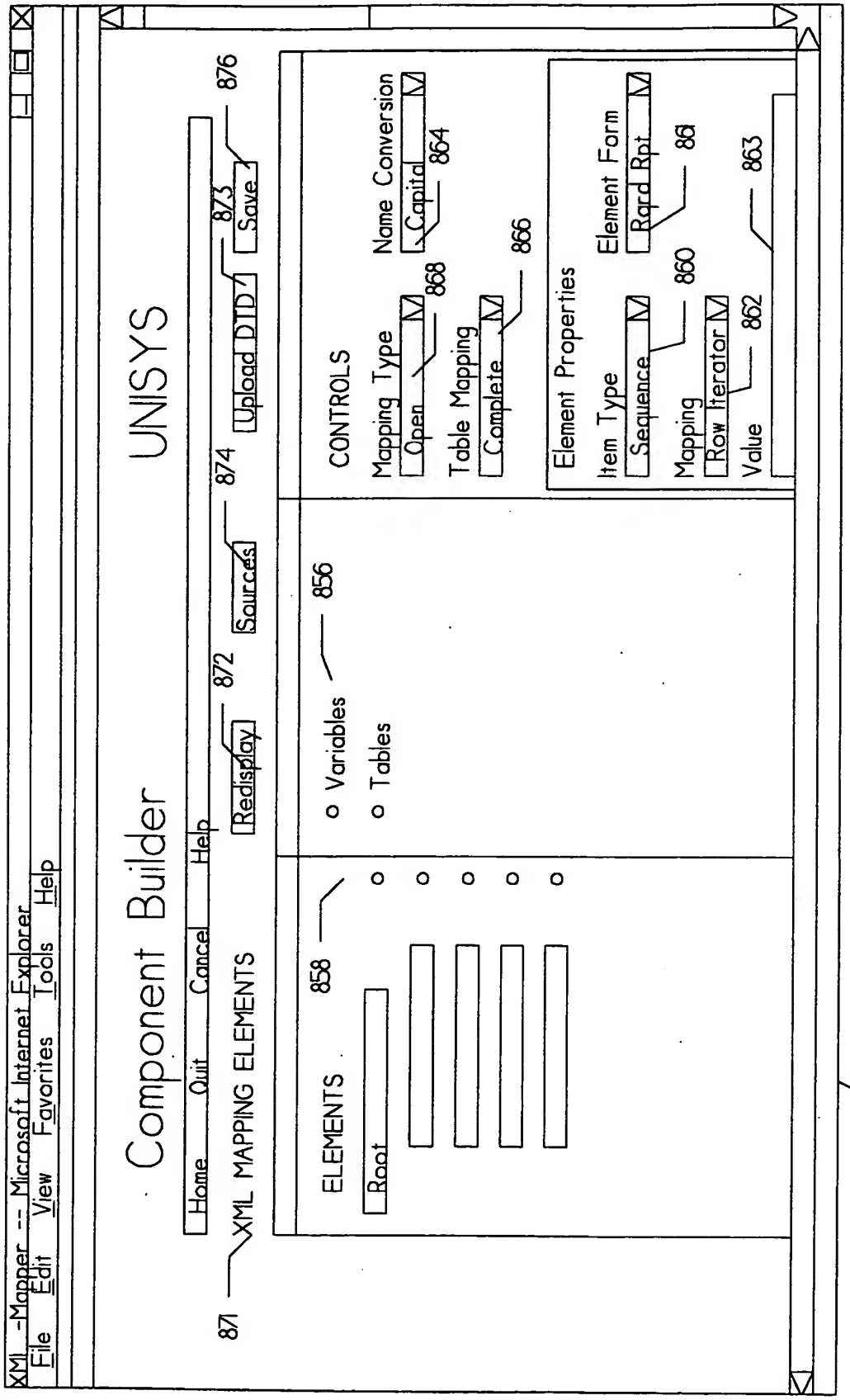
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
UNISYS
Component Builder
Home Quit Cancel Help
Redisplay
Sources
Upload DID
Save
XML MAPPING ELEMENTS
ELEMENTS
Root
Variables
Tables
CONTROLS
Mapping Type
Open
Table Mapping
Complete
Name Conversion
Capital
Element Properties
Item Type
Sequence
Mapping
Row Iterator
Value
Element Form
Rqrd Rpt
871
872
873
874
876
856
858
860
861
862
863
864
866
868
870

FIG. 27

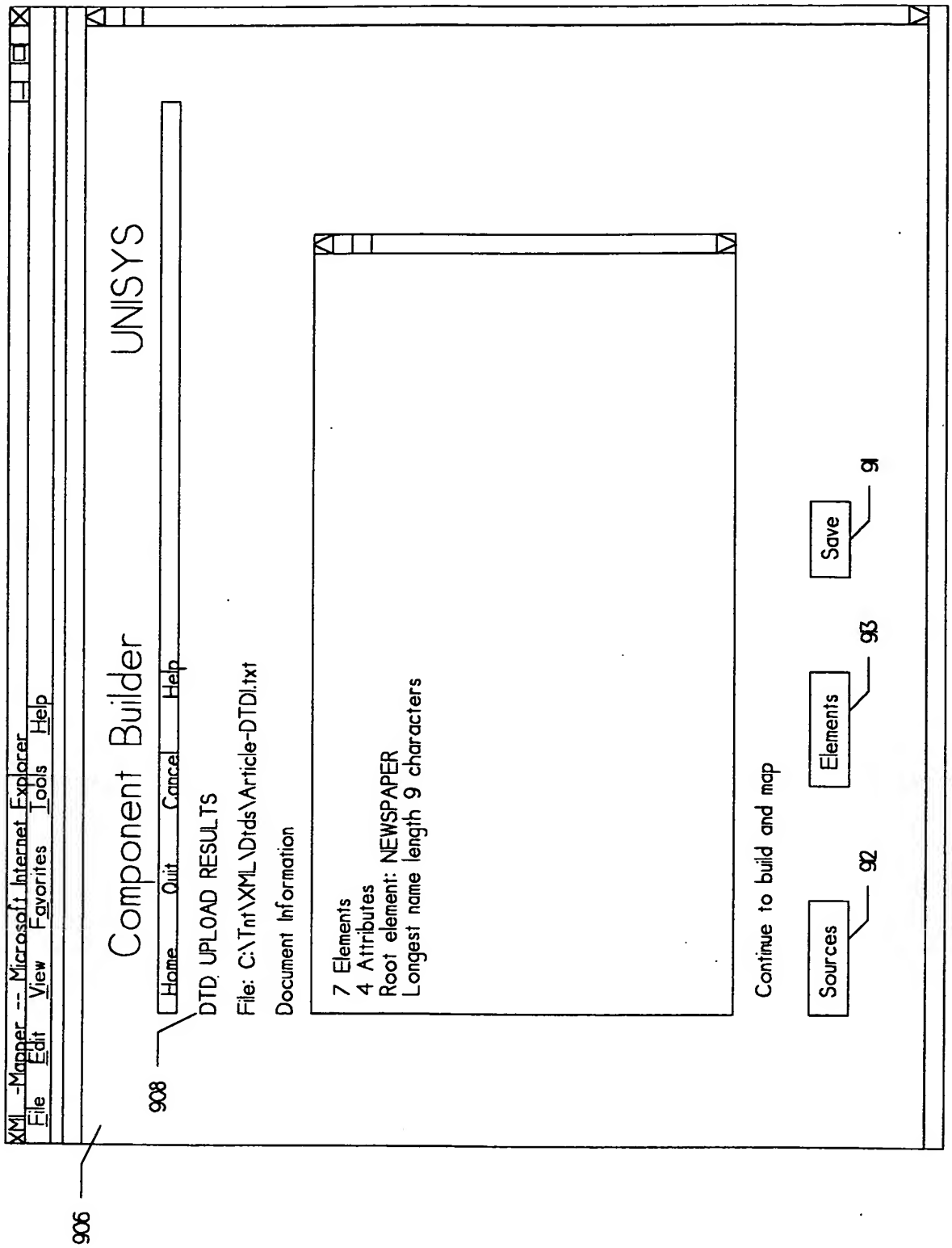
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
908
DTD UPLOAD RESULTS
File: C:\Tnt\XML\Dtds\Article-DTDI.txt
Document Information
7 Elements
4 Attributes
Root element: NEWSPAPER
Longest name length 9 characters
Continue to build and map
Sources
92
Elements
93
Save
91
906

FIG. 28

Express Mail No. ET970414370US
Cust[redacted]r Assignment No. 27516

IDT EXAMPLE — 90

Version:AC:0.0 — 92
Truncation:AC:0 — 93
TypeCheck:AC:0 — 94
ShoeData:ED:0:R
From:DE:1:R
From:EV:Supplier:20:string
TableType:ED:1:R
TableType:EV:TableInfo:50:string
Inventory:ED:1:R
Inventory:BT:Inventory:7
Inventory:IH:ITEMNUMBER:10
Inventory:IH:QTY:5
Inventory:IH:TYPE:10
Inventory:IH:GENDER:6
Inventory:IH:SIZ:3
Inventory:IH:COLOR:31
Inventory:IH:UNITCOST:13
Date:AD:1:R
Date:AV:Date:10:string
Time:AD:1:R
Time:AV:Time:5:string
Row:ED:2:R
Row:BR:1
ItemNr:ED:2:R
ItemNr:EF:1:ITEMNUMBER:10:R:string
Quantity:AD:2:R
Quantity:AF:1:QTY:5:R:string
Type:ED:2:R
Type:EF:1:TYPE:10:L:string:
Gender:ED:2:0
Gender:EF:1:GENDER:6:L:string:UniSex
Size:ED:2:R
Size:EF:1:SIZ:3:L:string:
Color:ED:3:0
Color:EF:1:COLOR:31:L:string:White
Unitcost:ED:2:R
Unitcost:EF:1:UNITCOST:13:R:string:
Row:EE:2
Row:ER:a
Inventory:EE:1
Inventory:ET:1 — 96

FIG. 29

total* 9528200T

DTD EXAMPLE 918

```
<!DOCTYPE ShoeData [

  <!ELEMENT ShoeData (From, TableType, Inventory)>
  <!ELEMENT From (#PCDATA)>
  <!ELEMENT TableType (#PCDATA)>
  <!ELEMENT Inventory (Row+)>
  <!ATTLIST Inventory Date CDATA #REQUIRED>
  <!ATTLIST Inventory Time CDATA #REQUIRED>
  <!ELEMENT Row (ItemNr, Type, Gener?, Size, Color?, Unitcost)+>
  <!ELEMENT ItemNr (#PCDATA)>
  <!ATTLIST ItemNr Quantity CDATA #REQUIRED>
  <!ELEMENT Type (#PCDATA)>
  <!ELEMENT Gender (#PCDATA)>
  <!ELEMENT Size (#PCDATA)>
  <!ELEMENT Color (#PCDATA)>
  <!ELEMENT Unitcost (#PCDATA)>
```

FIG. 30

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (330.12/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 32 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

XML INPUT DOCUMENT EXAMPLE — 920

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<ShoeData>
<From>Roseville Store</From>
<TableType>Low Inventory Count</TableType>
<Inventory Date="2000-12-05" Time="11:51">
<Row>
<ItemNr Quantity="0">32335</ItemNr>
<Type>Tennis</Type>
<Gender>Mens</Gender>
<Size>6</Size>
<Color>White/Zen Grey/New Spruce</Color>
<Unitcost>25.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">35410</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>5</Size>
<Color>White/Zen Grey/Neptune Blue</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">35411</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>6</Size>
<Color>White/Zen Grey/Neptune Blue</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="2">35420<ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>5</Size>
<Color>White/Chlorine Blue/Hot Lime<Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="1">37421</ItemNr>
<Type>Golf</Type>
<Gender>Womens</Gender>
<Size>8</Size>
<Color>White/Fluorescent Pink</Color>
<Unitcost>35.00</Unitcost>
</Row>
</Inventory>
</ShoeData>
<Color>White/Black-Hot Lime. Neo Teal</Color>
<Unitcost>40.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">32474</ItemNr>
<Type>Tennis</Type>
<Gender>Womens</Gender>
<Size>8</Size>
<Color>White/Light Marine-Ultramarine</Color>
<Unitcost>25.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="1">35310</ItemNr>
<Type>Running</Type>
<Gender>Mens</Gender>
<Size>6</Size>
```

FIG. 31

Express Mail No. ET970414370US
Customer Assignment No. 07516

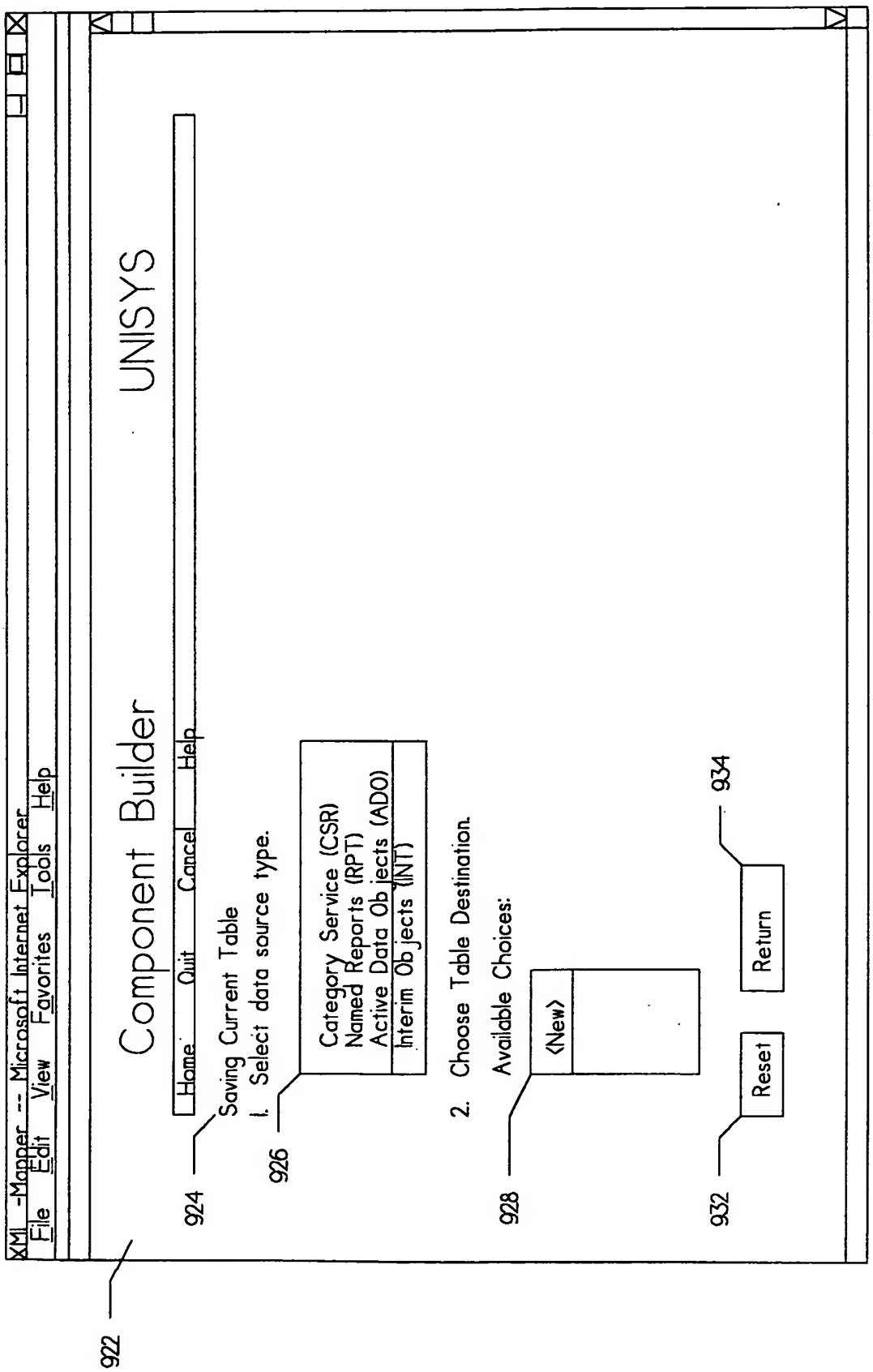

FIG. 32

Patent Application
Filing Date: 12/21/2001
Attorney Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 35 of 40
Express Mail No. ET970414370US
Customer Assignment No. 516

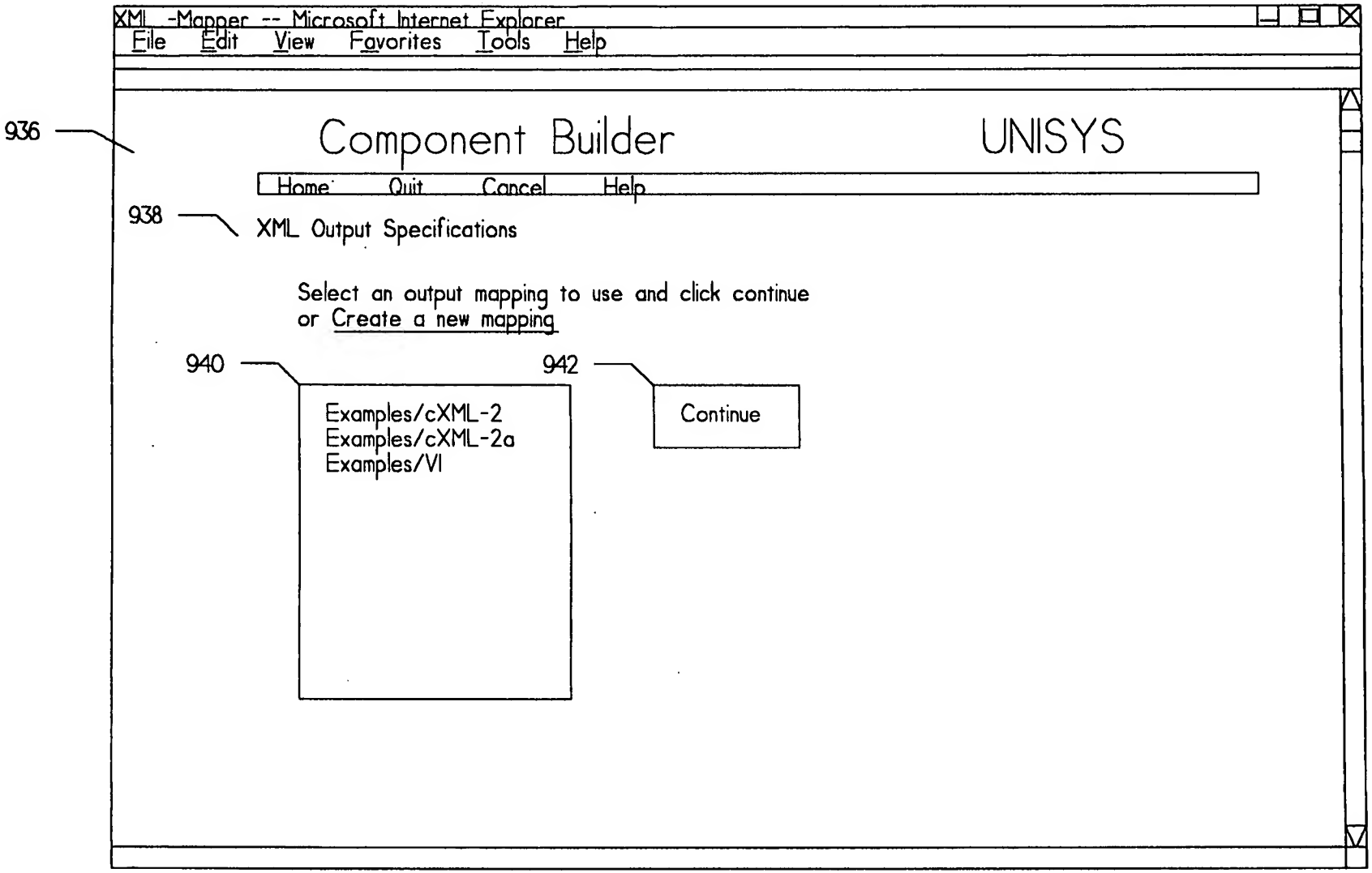

FIG. 33

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (330.12/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 36 of 40
Express Mail No. ET970414370US
Customer Assignment No. 16

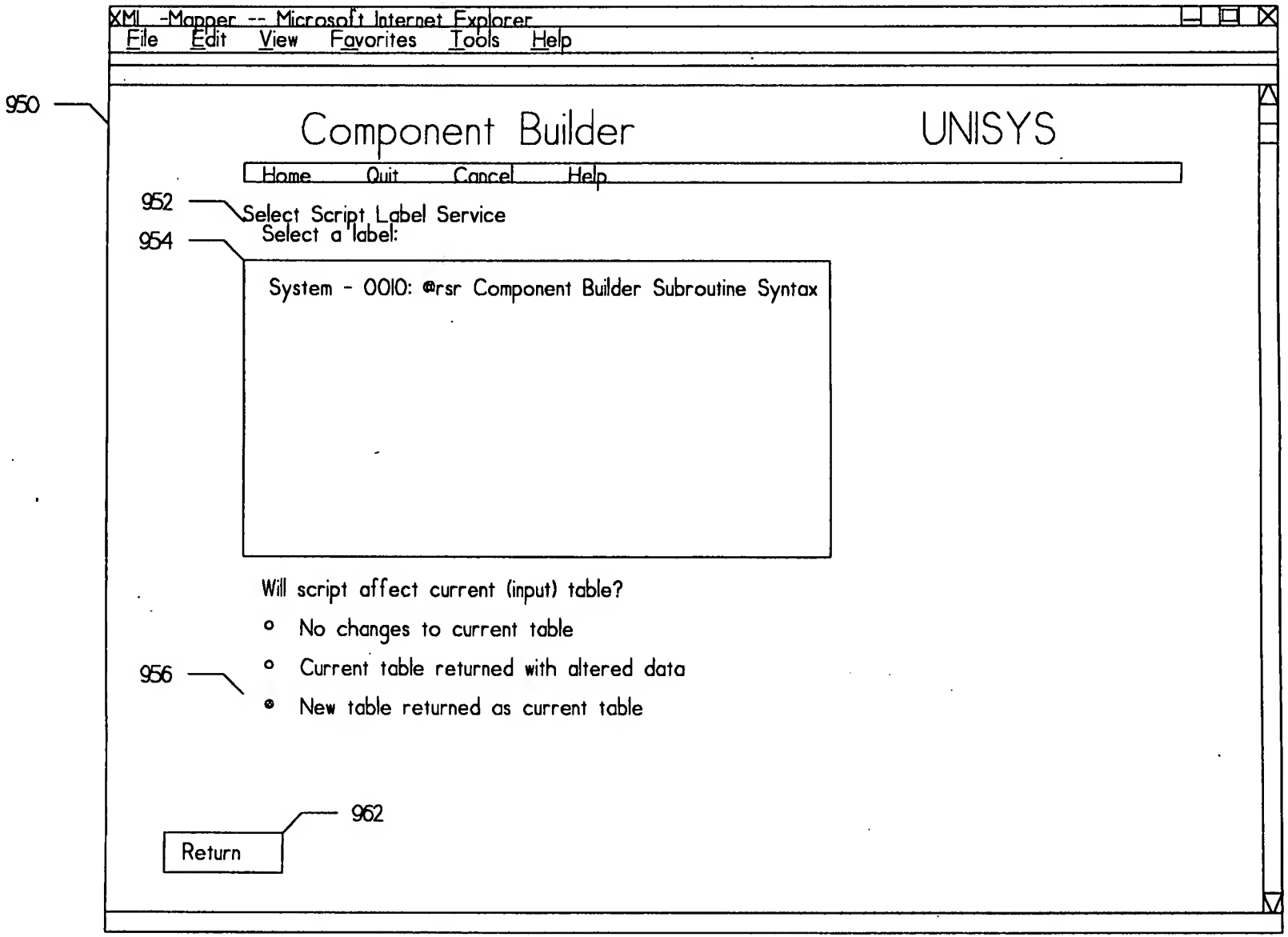

FIG. 34

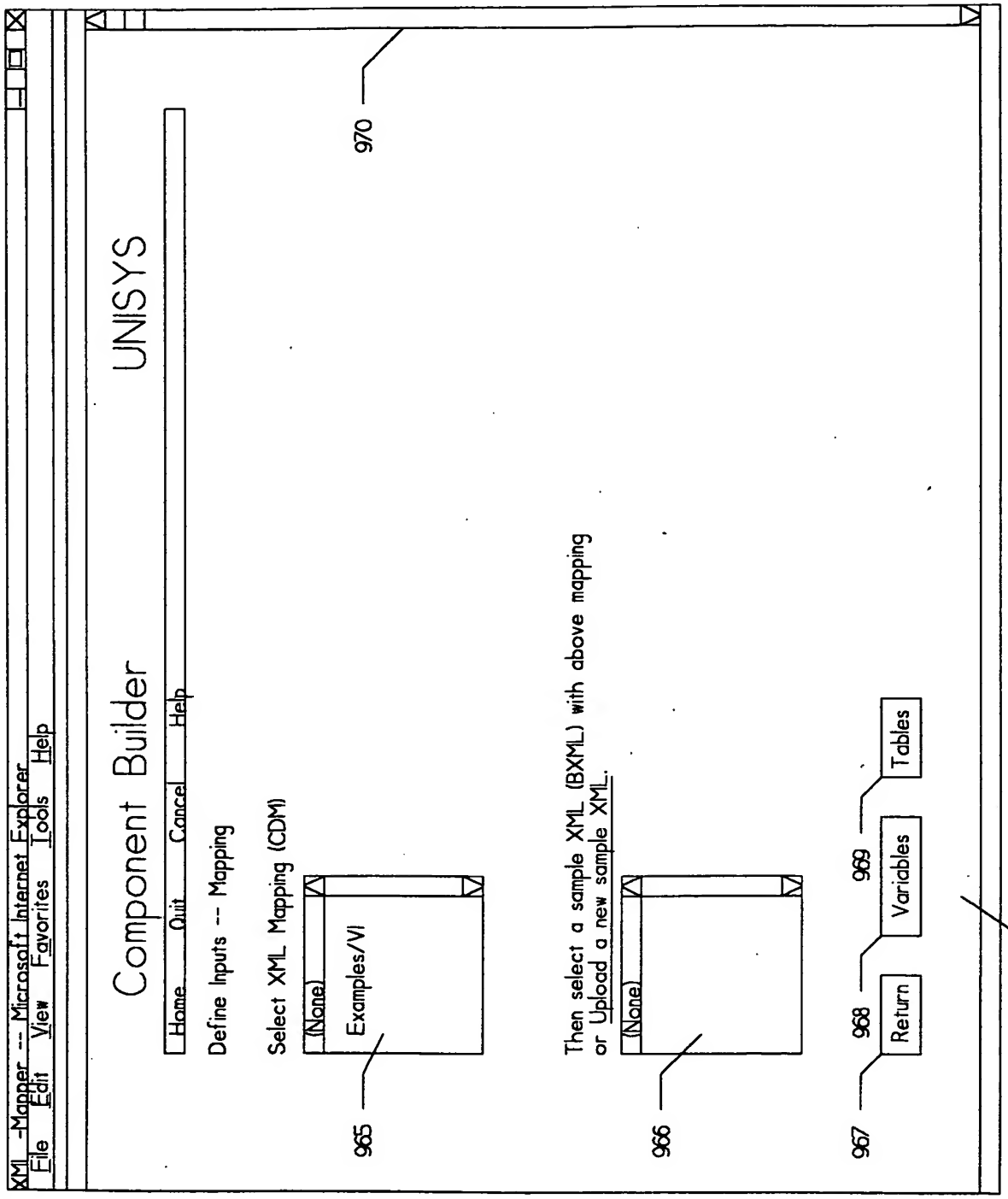
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
Define Inputs -- Mapping
Select XML Mapping (CDM)
(None)
Examples/VI
Then select a sample XML (BXML) with above mapping
or Upload a new sample XML.
(None)
Return
Variables
Tables
970
965
966
967
968
969
964

FIG. 35

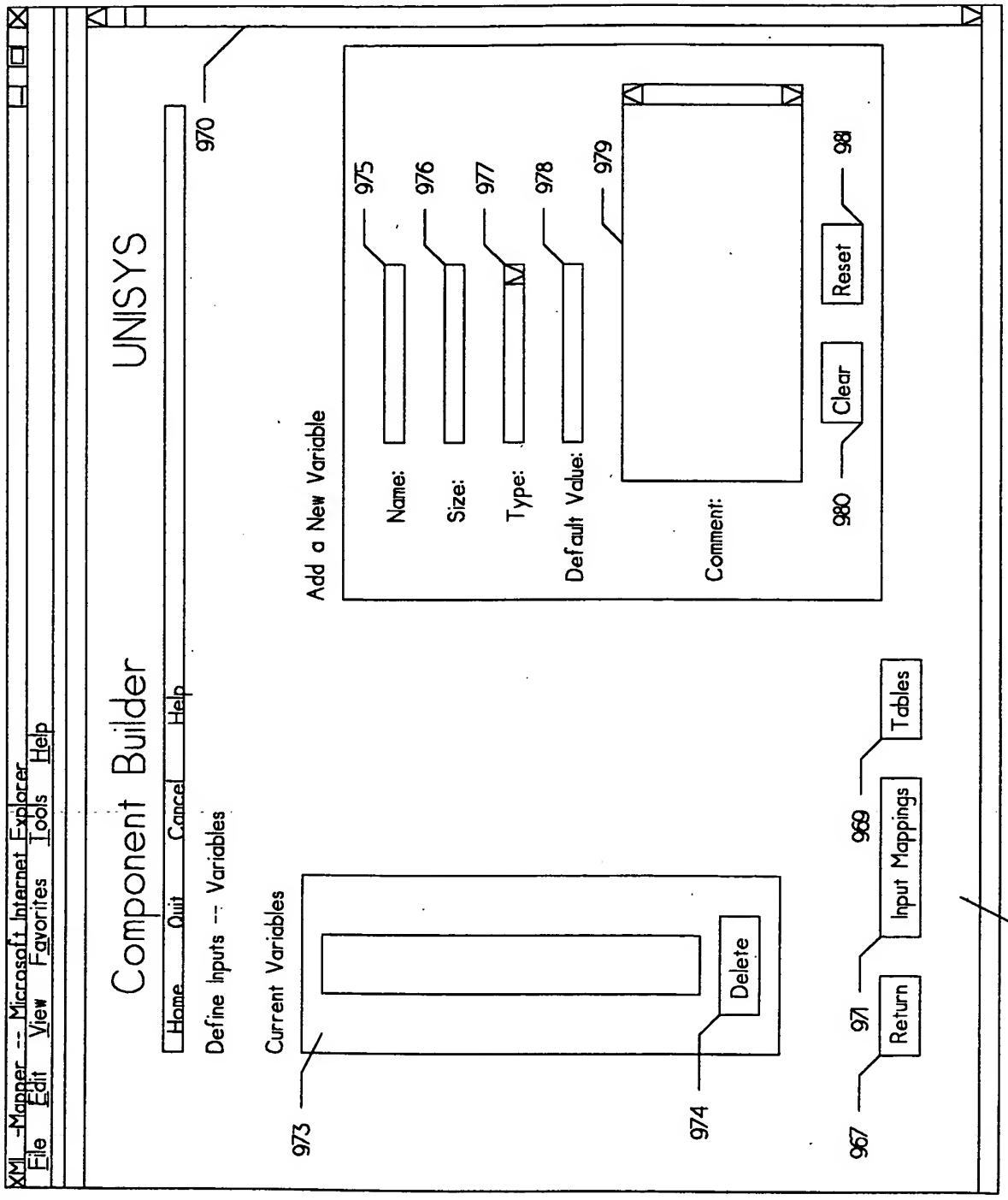
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
Define Inputs -- Variables
Current Variables
Add a New Variable
Name:
Size:
Type:
Default Value:
Comment:
Clear
Reset
Delete
Return
Input Mappings
Tables
970
971
972
973
974
975
976
977
978
979
980
981
967
969

FIG. 36

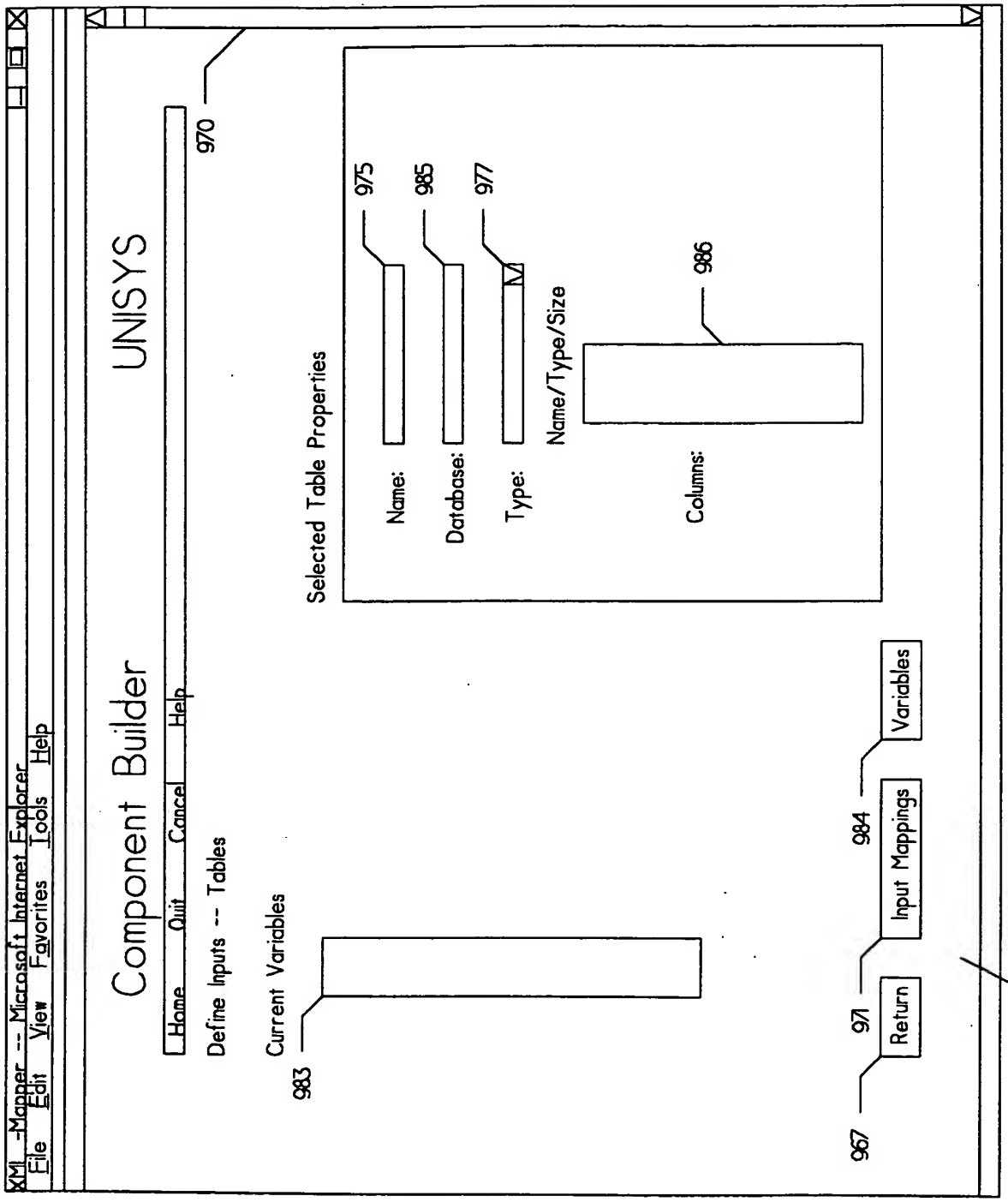
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
970
Home Quit Cancel Help
Define Inputs -- Tables
Current Variables
983
Selected Table Properties
975
985
977
Name:
Database:
Type:
Name/Type/Size
986
Columns:
984
Variables
Input Mappings
971
Return
967
982

FIG. 37

Express Mail No. ET970414370US
Customer Assignment No. 7516

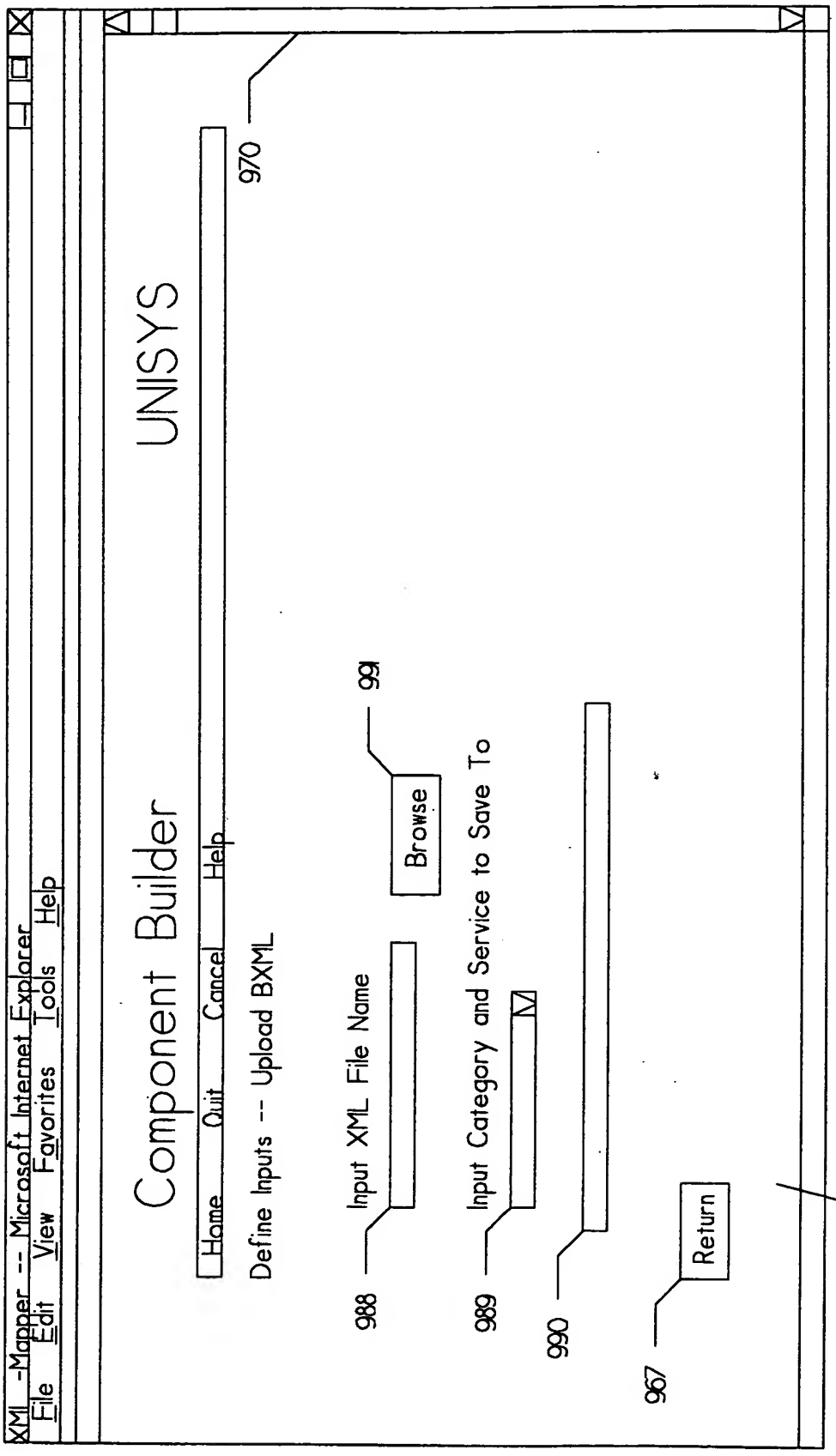

FIG. 38